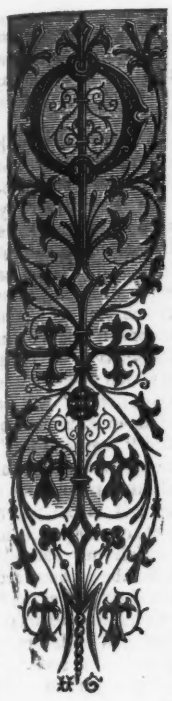
The Builder.

VOL. XXXII.—No. 1635.

Tattersall's.



N Wednesday last, the annual Carnival of England took place at the usually quiet little red-bricked town of Epsom. This is a movable feast, although it is not in the Church Calendar, and hundreds and thousands make it a holiday, although it is not recognised by authority. Epsom was long famous as an inland watering-place, and J. Macky describes the life there at the beginning of the eighteenth century in his "Journey through England." "In the morning gentlemen saunter about in their gowns, at the wells, as at Tunbridge, or play at bowls. After dinner we ride out on the Downs, which are very fine indeed, or take a coach to the ring, where all the good company of the neighbourhood come in fair weather, and at night a party at cards, raffling in the long rooms, or a bottle at the tavern finishes your evening." On the Derby day all classes seem to be beside themselves, and take a violent interest in what at other times they are heedless of; the names of horses are on every tongue, of which horses the day before few had ever heard. This is the outer view of horse-racing, but there is an inner side, which is represented at the head-quarters of the racing world, viz., Tattersall's, of world-wide fame as "the Corner," and called also the "high-change of horseflesh." Richard Tattersall, the founder of this establishment, was born in 1723, and commenced life as trainer to the last Duke of Kingston, brother of Lady Mary Wortley Montagu and husband of the notorious Miss Chudleigh. The Duke died in 1773, and Tattersall appears soon afterwards to have set up for himself as an auctioneer at Hyde Park-corner, for he sold off the stud of the Duke, and on December 14th, 1774, an injunction was applied for to prevent payment of the proceeds to the Duchess, who was then under indictment for bigamy. In 1775, Tattersall's establishment was frequently advertised in the public newspapers, and in 1779 he bought the celebrated horse "Highflyer" of Lord Bolingbroke for 2,500*l*. This purchase is said to have been the foundation of his fortune, and he was not ungrateful to the animal, for he requested the artist who painted his portrait to introduce into the picture a small label inscribed, "Highflyer, not to be sold." He also named the house he built for himself in the Isle of Ely "Highflyer Hall." Tattersall now commenced a stud-farm, and opened a subscription-room for the accommodation of his customers, the regulations of which are dated 1780. This year is an important one in the annals of the turf, for it was then that the first Derby was run. Tattersall's soon obtained the fame that it has never lost, and in "The Belle's Stratagem," first performed in 1782, *Flutter* says, "Oh, yes! I stopped at Tattersall's as I came by, and there I found Lord James Jessamy, Sir William Wilding, and Mr. ——. But, now I think of it, you shan't know a syllable of the matter; for I have been informed you never believe above one-half of what I say." The old auction-mart, with all its surroundings, has been swept away, and a new home has been found at Knightsbridge, on what is still called by courtesy the Green, near Albert Gate. The original place was situated by the side of St. George's Hospital, and entered from Grosvenor-place. At the bottom of a rapid descent was a tavern, bearing the appropriate sign of "The Turf." Opposite to this was a gateway, leading into a garden-like enclosure, with a solitary tree, where the horses were tried and examined. The subscription-room was designed by the late Mr. George Tattersall, author of "Sporting Architecture." In the court-yard was a domed structure, containing a pump and the figure of a fox, and surmounted by a bust of George IV. in his eighteenth year. This familiar object has not been destroyed, but was moved to the new buildings, which were opened by Messrs. Tattersall in 1864. The ground occupied at Knightsbridge is nearly two acres in extent, and was laid out by the late Mr. Charles Freeman, the architect, with due attention to comfort and convenience. The frequenters of Tattersall's are drawn from all classes of the community; and although the lower order of "horsy men," the blacklegs and their victims, sometimes make themselves disagreeably conspicuous, it is also the resort of high-minded English gentlemen. Besides the lovers of the turf, all those who buy or sell horses find themselves at some time within the sound of the Tattersall hammer. Mr. Richard Tattersall, the founder of the family, died in 1795, aged seventy-two, and those who knew him praised him for his good qualities. It was said that he died as he lived, tranquil in his mind and benevolent in his disposition; and that from his indefatigable industry, and the justice of his dealings, he acquired a degree of affluence which was exercised for the general good without ostentation. His portrait painted by Thomas Beach was engraved by John Jones, and shows a serious-looking man, dressed like a well-to-do farmer, with his left hand resting on the Stud Book. Richard's son Edmund succeeded his father, to be succeeded on his death, in 1810, by his sons Richard and Edmund. Richard the second turned his attention to the foreign trade in thorough-bred horses, and was the first to form the extensive business of the house abroad. Edmund died on December 11th, 1851. In the next generation, again, Richard was succeeded by his son Richard, who died three years ago, and Edmund Tattersall by his nephew Edmund,—the son of another brother, George,—and now the only survivor of the name, and the head of the firm at Albert Gate.

We ought not to allow the rascality of many of the supporters of the turf to blind us to the fact that a large number of them are men of integrity like Richard Tattersall and John Watson, the training groom, who is described by Holcroft, the author of the "Road to Ruin," and we know that Tattersall's has exercised considerable influence for good over the sporting world ever since it has been opened. Betting has been the curse of horse-racing, and the cause of its chief evils, and, as old moralists, who inveighed against card-playing, dicing, and play-acting, saw good in horse-racing, we may be sure that the sport was then free from much of the evil attending it in the present day. The history of Tattersall's is the history of horse-racing since the end of the last century, but horse-racing in England has a history that can be traced for a long series of years before the foundation of this establishment. The Saxons were fond of their horses, and Hugh Capet was very acute, when, wishing to obtain the hand of Athelstan's sister, he sent that king several running horses, with saddles and bridles, and bits of solid gold. The favourite season for the races in the middle ages was, as at present, about Whitsuntide, and in the old romance of "Sir Bevis, of Hampton," occurs the following interesting passage:—

> "In somer at Whitsontyde,
> Whan knightes most on horsebacke ride;
> A cours, let they make on a daye,
> Steedes, and palfraye, for to assaye;
> Whiche horse that best may ren,
> Three myles the cours was then,
> Who that might ryde him shoulde
> Have forty pounds of redy golde."

Several of our early kings were breeders of horses, and in Elizabeth's reign racing was a fashionable amusement; but public races were not established until James I.'s time. Newmarket, York, and other courses gradually grew into celebrity, and Croydon became what Epsom is now—the most popular course near London. More than 200 years ago a meeting of Cavaliers took place near Epsom, according to Clarendon, "under pretence of a horserace." Newmarket early established its reputation as the metropolis of racing, and as it owes its pre-eminence to the variety and excellence of its race-courses it is not likely to be superseded. The ground on the heath has been the property of the Jockey Club since 1753, which was nearly five and twenty years after the formation of the club. Sir Thomas Bunbury, who died in 1821, aged eighty, had been its steward for fifty years. It was early in the Georgian era that the practice was commenced for the Houses of Parliament to adjourn over the Derby-day. It is to this custom that Warton refers in the lines:—

> "Is this the band of civil chiefs design'd
> On England's weal to fix the pondering mind,
> Who while their country's rights are set to sale
> Quit Europe's balance for the jockey's scale?"

Professional jockeys are of late introduction, and it was formerly the practice for gentlemen to ride their own horses. Philip, king of Macedon, and Hiero, king of Syracuse, may be mentioned among the ancient gentlemen jockeys, and in the reign of James I. private matches between gentlemen were frequent. In later times, "Old Q.," the noted Duke of Queensberry, once rode his own horse in a race, and the patrician jockeys of his day, who,—

> "Smit with the love of the laconic boot,
> The cap and wig succinct, the silken suit,"

wished to show their prowess on the course, were numerous. So many different qualities are required to make the perfect jockey that it is not surprising that his class is a small one. He must be small, but strong, intrepid and cool. He must work hard and eat little, and he has the mortification of knowing that when he leaves off wasting, and takes to a natural diet, he will gain daily in weight and spoil his form. However, when the racing season is over, the jockey usually eats to suit his taste, and report tells that Frank Buckle always ate a goose at supper when his labours for the season were ended. John Oakley was a celebrated jockey in his day, and it is said that he was the only man who could ride "Eclipse" well. Buckle won the Derby in 1802 with the Duke of Grafton's "Tyrant" (the betting being seven to one against him), beating "Young Eclipse," which was considered the best horse of his year. Buckle won this race and the Oaks entirely by fine riding, for it was said that Tyrant was one of the worst horses that ever won a Derby. Samuel Chifney was considered the *beau ideal* of a jockey, and John Day acquired the honourable title of "Honest John." Day rode seven stone, but he was the son of a man who weighed twenty. The pay of a jockey is not specially great, but a successful one is sure to obtain large sums from the gratitude of his employers. In 1865 Lord Stamford is said to have engaged Jemmy Grimshaw, a light-weight jockey, at a salary of 1,000*l*. a year. Unfortunately the word "jockey" has obtained an objectionable meaning, and this is, perhaps, partly due to the reprehensible practice adopted by many of betting on the race in which they are engaged.

Chifney, in his "Genius Genuine," admits that he bet against the horse he rode, and George IV. dismissed Robinson, one of the most successful jockeys of his time because he was worth a large sum of money. The names of race-horses are legion, but the fame of only a few becomes a matter of history. If we take the winners of the Derby, which is called "the blue riband of the turf," we find even there but few names which are very familiar to us now. Cromwell took considerable interest in the breeding of running horses, and had for a stud-groom a Mr. Place. His "coffin mare," so called from the circumstance of her being concealed in a vault during the search for Cromwell's effects at the time of the Restoration, was one of the earliest horses known to us by name, and no horse's pedigree can be traced further back than Place's "White Turk." Charles II. imported mares from Barbary, and one of these was the dam of "Dodsworth," which is said to be the earliest racehorse whose pedigree can be properly authenticated. The Godolphin Arabian, who was the founder of some of the best blood among racehorses, was the property of the Earl of Godolphin, who flourished in the reign of George II. "Flying Childers," who was bred in 1715 by the Duke of Devonshire, was considered to be the fleetest of the fleet. He ran four miles in six minutes forty-eight seconds, or at the rate of 35¼ miles an hour. "Eclipse" was foaled in 1764, and his reputation was so great that it has been said that English racing may be dated from his time. He was the sire of 160 winners, and a fortune to his possessor, Mr. O'Kelly, one of the foremost racing men of his day. "Herod," like "Eclipse," beat every horse that was brought against him, and also left a numerous and valuable progeny. "Prunella" was the dam of eleven first-rate horses whose names all began with the letter P., and is said to have realised to the Grafton family little short of 100,000*l*. After the death of Charles II. racing had comparatively little support from the Crown or aristocracy. James II., William III., Anne, and George I., were all patrons of the turf, because they supposed it their duty to be so, but it was not until the time of the Duke of Cumberland (the "butcher of Culloden") that royalty took any personal interest in the sport. He was the founder of the Ascot race meeting. Colonel St. Leger founded the Doncaster races, and the Earl of Derby the Derby and Oaks. The Duke of Grafton was one of the most successful of racers, as he won the Oaks eight times, and the Derby four times, viz., with "Tyrant," in 1802; "Pope," in 1809; "Whalebone," in 1810; and "Whisker," in 1815.

The English people, from the highest to the lowest, grow up with a love for the beautiful animal which ministers both to their necessities and their pleasures, and this country has always been recognised by foreigners as the paradise of horses, so that naturally all must take a certain interest in the records of the turf; but unfortunately so many evils have arisen and increased with the growth of horse-racing, that those are happy who are contented to know its history, without wishing to learn too much of its practice.

Tattersall's, as the head-quarters of horse-selling and horse-racing, will always be an important institution, and was never more distinguished by honourable management than it is at the present time. It ought to be generally understood that the firm have nothing to do with betting personally, and that the Subscription-room is managed by a committee of noblemen and gentlemen, and is a club, with the members of which Messrs. Tattersall have no concern in their business, which is entirely confined to the sale of horses by commission.

THE FORTHCOMING CONFERENCE OF ARCHITECTS.

THE presidency of one of the ablest and most successful architects of the day will in itself go a good way to insure success and *éclat* to the General Conference of Architects which is to be opened at the rooms of the Institute on the 15th. Many provincial members, and provincial visitors, will feel an interest in hearing the opening address by Sir Gilbert Scott, who has been a name wherever church architecture and church restoration have been carried on in this country, and whose works and reputation are more generally known and recognised, among the professional and non-professional public alike, than is the case perhaps with any other representative of English architectural practice. It is a fortunate idea also to make the opening meeting the occasion for the annual distribution of the professional honours, the gold medal and the Institute prizes; a ceremony which, bringing with it always a certain interest, a general revival of goodwill and honourable emulation among those concerned in it, will derive additional value in this instance from taking place before a larger and more widely representative audience than usual. It was probably the fact of this ceremony taking place at the opening meeting of the Conference which led to the idea of further illustrating the working of the Institute prize system, by restricting the exhibition of drawings this year to those which had obtained prizes from the Institute, instead of leaving it open for the contribution of working drawings and miscellaneous designs from the profession generally. This decision will result in a display of much more finished drawings than were seen at the former meetings, but the practical interest will be less than on those occasions.

At the same time it will be seen that the tendency of all this is to emphasise very much the position of the Institute of Architects in relation to the country societies, which are invited to join in the Conference, and to give to the whole meeting the look of being an affair of the Institute specially, to which representatives of provincial societies may come if they are so minded. We should scarcely be inclined to say "unreservedly" that this is not in some respects the best way in which the meeting can be worked and regarded; and that the central body, with its long standing, its privileges, and its great advantages, is not fully entitled to take this stand. But as the Conference is supposed to represent the profession generally in this country; and as it is one important object that its decisions and recommendations should be as widely adopted as possible, in order to promote uniformity of professional practice throughout the land, it is right that the attitude and feeling of the provincial branches of the profession should be fully considered also. The part of the programme which we have already alluded to suggests the idea of the whole being framed very much from an Institute point of view; and it is not to be expected that the mass of provincial architects, some of them of considerable ability and standing, who are not members of the Institute, will look at the matter in exactly the same light. The position of the provincial societies in relation to the central one is, in fact, somewhat vague and anomalous at present, and it would be one of the best works which such a Conference as this could carry out, to do something towards establishing a more definite ground of relation and co-operation between them. The existence of a number of provincial societies, upholding local rules and customs, independently of one another and of the central body, is, of course, prejudicial to anything like joint and corporate action of the profession in the country, or the assent to any leading principles of design or of architectural art. It was on this ground that a contributing correspondent, at (if we remember right) the first Conference, proposed, with great *naïveté*, the annihilation of all the provincial societies as the first step towards accomplishing any permanent good. This is one way of looking at it—a way more downright than practical, and which tends towards giving the metropolitan standard of practice the exclusive predominance; a result at any rate only partially desirable, if it were possible. The other principle of acting, and the only other that would at all tend to bring about the desired end, would be to widen the borders of the Institute a little, to modify the tenour of its rules in some instances, so as to fit them to embrace provincial as well as metropolitan conditions of practice, and to invite the various societies in the provinces to co-operate on a more equal footing with the Institute, and to adopt the part of branches of the latter for carrying on its work more effectively throughout the country. This was the system strongly urged by an eminent French architect not long since, in regard to the similar relation between the profession in Paris and in the French provinces. But in order that such a unity and co-operation may be carried out, it is, we are inclined to think, necessary both that the metropolitan body should show a disposition to take the conditions of provincial practice further into consideration, and that a greater degree of cordiality should be manifested towards the provincial members of the profession. We should be the last to recommend that the Central Society should in any way derogate from its position as the most important and leading body of the profession. But we hear complaints, from various quarters, of a want of such cordiality—of a *de haut en bas* style of reception accorded to the provincial brother (more apparent at the ordinary meetings, perhaps, than at the conferences), which, if such complaints are duly founded, argues something amiss in the working or the spirit of the Institute, and which at all events cannot serve to further the end of professional union, in the larger sense of the word. Without attempting to pronounce as to how far such complaints are just, we note their existence, as a fact to be considered in any attempt made to remove the obstacles to a unanimity of professional practice.

The last Conference dealt especially with practical subjects; in the ensuing one the artistic element of architecture will be somewhat more represented; for the paper by Professor Lewis, on the second day, "The Education of Architects," brings up a subject which cannot but embrace, in the discussion as well as in the paper itself, much which bears on the position of architecture as an art; and besides this, we have Mr. Stevenson's paper, on the fourth day, "The recent Re-action of Taste in English Architecture," in which no doubt the question, "Can these dry bones live?" will be fully applied *apropos* of the Queen Anne school and its somewhat unlooked for "resuscitation." What are the lecturer's special qualifications for the treatment of so difficult and perplexing a subject we do not as yet know; if in the paper, or the discussion following it, any ray of light is thrown upon the scene which may serve to give some logical *locus standi* for the modern art-architect, it will be a notable day for some of those conscientiously-minded students who have too much originality to be satisfied with a mere business routine of professional life, and who are at present obliged to content themselves with doing good things without being able to find any good reason for them. "The professional responsibilities of architects" will be treated of on the third day by Professor Kerr, who may at least be expected to deal with the subject *con amore*. This question has recently occupied the attention of our transmarine professional brethren, and we drew attention a little while since to a long essay on the subject printed in the "Revue Générale de l'Architecture" (see p. 145, *ante*). It is one, we may observe, in regard to which we not only want to know and to fix our own position, but we want the public, our employers, to know it also, when fixed; and as reporters for the public press are to be invited to attend, we hope they will take due note of a subject which concerns the client as well as the architect.

The mention of the relation of the architects to the public suggests a modification of the conditions of carrying on the Conference which it might not be too late, perhaps, to apply, even on the present occasion, and which, at all events, on future occasions might very well be tried. It cannot be expected that the general public should be much interested in questions regarding the routine of professional practice; and on other accounts it would be better that these should be discussed at strictly professional meetings. But we think it would be worth while to try the experiment of advertising, and opening to the public at large, one or two of the meetings at which subjects belonging purely to the artistic side of the profession are to be discussed and illustrated. It is a standing complaint that the public are ignorant of, and uninterested in, the art of architecture. They are certainly ignorant, for the most part, of its principles and history, but uninterested in it we think they are not; and it would be worth while to try whether a general audience could not be got to listen to a paper or two by architects eminent for their artistic abilities, illustrating some phase in architectural art; and whether it would not be possible to render such papers, and the discussions they would give rise to, interesting to educated people generally, as well as instructive or suggestive to the professional portion of the meeting. This would be just the same principle which has been found, in one sense, so successful at the Church Congresses, where ecclesiastics lecture and hold arguments on subjects connected with Church progress and Church polity, for the benefit of large audiences of laymen. There is little fear that the discussions on the architectural platform would reach anything like the point and rancour of religious hostilities; and so far the meetings

might be duller, certainly, than those at the Church Congresses; but we cannot help thinking that something might be done in this manner to popularise architecture and architects, and to render the Architectural Conferences a means of ingratiating the profession with the public as well as with each other. It would be necessary to engage a larger room specially for the public meetings, but the increased attendance which this publicity would induce, even on the part of the architects, might render it quite worth while to do this. We leave the idea, at all events, for the consideration of those who may be immediately concerned in the working of this or future Conferences.

FURNITURE IN THE INTERNATIONAL EXHIBITION.

THE display of furniture and decorative art in Galleries VII. and IX., though less varied and interesting in some ways than on former occasions, exhibits, in regard to the furniture in particular, a decided improvement in really artistic qualities of treatment, a reaction from that taste for very angular and ostentatiously awkward forms, which was very lately so prevalent. A great part of one side of Room VII. is occupied by a complete scheme for the "decoration of a room," by Messrs. W. B. Simpson & Sons, including a wainscot, door, wall-paper, and fire-place. The wainscot consists of a dull red-tinted wood for the stiles, with panels of a darker wood with a Japanese "key-pattern" diaper slightly cut on the surface, and longitudinal panels above, filled in with ornamental tiles with a rather strong yellowish ground. The paper is a conventional representation of leaves and fruit, including tones of grey, green, orange, and citrine: the effect so far is very rich and harmonious without being in any degree too pronounced. The door, with conventional ornament painted in white and very light grey on a dark ground, though both pleasing and novel in itself, is out of keeping with the rest, and seems to have, in regard to colour, no relation to it. The yellow tones of the tiles in the wainscot and fire-place create a difficulty in this way, and are not very easy to harmonise with an extended scheme of decoration. In the furniture the prevalent "ebonised" and gilt process is of course a good deal represented. A pleasing specimen of this mode of execution, with incised and gilt ornament, is the cabinet and secretaire by N. W. Batley (3,927), for Messrs. Gillow & Co.; but the painted panel figures would have been much better with a merely gilt or decorated background, and not an attempt at landscape. There is rather too great a run on picture panels in furniture just now, but it does not do to attempt too much in this way. Near this Messrs. Cox & Sons show a hanging cabinet of Egyptian detail, with figures and lotos-plants on gold ground in the panels, and the "winged globe" device filling up the cornice, which has decided character: a quality which the adjoining works of Messrs. Gregory & Co. (3,936-7-8) are much in want of. Mr. Shoolbred's Italian sideboard is a large and ambitious article in polished wood, very well finished and good in general design and idea, but somewhat weak in detail; the treatment of the panels of the lower doors is the best point. A striking contrast to this, and in every way a higher class of thing, is Messrs. T. & H. Scott's "walnut and marquetry sideboard" for the Midland Hotel (3,966: Gillow & Co.). This is a noble, massive piece of furniture, in unpolished wood, generally Gothic in feeling, but partaking of Jacobean character in detail; the carved ornament is thoroughly wooden in character, and all presents the appearance of being sunk from the surface, and not applied: the inlaid panels have a good effect; the only mistake is in the ornament of the overhanging cove of the cornice, with rather ragged naturalistic foliage gilt: it would be worth while to alter the decoration of this part, which is scarcely in keeping with the rest: otherwise this is a piece of furniture well worthy the great establishment in which it is to be placed. The Oriental furniture by Mr. Schoolbred (3,962-5) is pretty and effective, but rather wants unity of *motif* and style; the large cupboard or wardrobe, with its heavy angle shafts and mingling of light and dark woods, is a fine piece of work, however. Another piece of furniture for the Midland Hotel, in "ebonised and gold" style, is exhibited (3,940), designed by Mr. C. T. Henry: this is not equal to the sideboard before mentioned, but is a good piece of work of the kind, and the panels are properly and tastefully painted. H. & J. Saleur's ebony cabinet inlaid with ivory (3,961) is a beautiful piece of execution in the "architectural" style, with a good "plan," but the ornamental inlay is very poor and commonplace in design; nor can more be said for the inlaid piano placed in the middle of the room (3,942), designed by Mr. T. Jacob, but which really has very little "design" about it. There seems a singular lack of novelty or fancy in the treatment of pianofortes generally, even by firms which turn out very artistic work of other descriptions. The carved chair, "with seat and back of appliqué blue silk on darker blue velvet, worked by the "School of Art-Needlework" (3,969), is an effective thing, with a little too much blue about it, though this goes well with the dark (ebonised?) wood. The sideboard in stained oak by W. S. Morton & Co. (3,954) has a good deal of originality in the treatment and character of the detail; the carved ornament is kept very flat, in panels with ebony margins; there is a distinct style about the whole which is commendable. The brown and silver cabinet, *i.e.*, silver-stencilled ornament on a brown ground, by Messrs. Gillow & Co. (3,935), is a very pretty work, with some novelty in the effect; but it is a style of ornamentation which would almost require to be carried out throughout an apartment, for scarcely anything else would go with it very well.

Some specimens of glass-cutting and engraving in one of the centre cases are good; those of Pellatt & Wood being the most showy, those bearing the name of Barnes the most artistic. What the glass articles of Messrs. Philips & Pearce, in another case, were sent here for, it would be difficult to imagine. A massive stand chessboard with carved "men," by F. Jurschina (Vienna), is a first-rate piece of workmanship, but presents nothing new in fancy, the pieces taking the form of armed men, &c.,—an old enough idea. The specimens from the Worcestershire Porcelain Works, which fill a case, show a very pleasing tone of light drab ware, with coloured figures of birds, insects, &c., in relief, but the whole have the effect of being somewhat tame imitations of Oriental work; the shapes and outlines are mostly good.

In Room IX. Messrs. Doulton & Co.'s pottery claims recognition for richness of tone and surface in many of the articles (vases, &c.) exhibited; their tile decoration for a wall has merit, and the figures of "Venice" and "Florence," introduced in large panels, are of a higher class, in design and feeling, than we generally see in this kind of work. There is, of course, no lack of painted tile designs, of which those designed by Mr. Moyr Smith (3,744-5-6), small series of subjects, are fanciful and pretty, and suitable for the mode of execution. Messrs. Minton, who send these, also exhibit a case containing what may be regarded as experiments in the artistic treatment of porcelain; a collection of ware showing the first introduction of working in coloured porcelain clays. "The plateau, with a female figure watering flowers, executed by M. Solon, is the first specimen ever made in which all the colours are obtained by staining the porcelain and firing them in the biscuit-oven." The articles ornamented by this process would, no doubt, find many admirers among the public; but the artistic result is not worth much, as it is simply an attempt to give to pictures on tiles the realism and freedom of water-colour drawings on paper, which of course cannot be done. There is a style of design, of a conventional nature, which can be carried out with great effect on tiles. The attempt to go beyond this, and to make tile-pictures, is rather a predominant error in works issued from "Minton's Art-pottery Studio"; though it is natural that a house which has so long occupied such a position in the art should be inclined to act on the "nothing like leather" principle, and try to do everything on tiles. Other big panels of tiles, painted over with flowers and animals, are scattered about—things of which no one can see the good. The culmination of pottery-art here, however, is the great chimney-piece and looking-glass frame, with architrave round, in glazed pottery, with large painted tile-subjects in panels, the whole intended for the Holborn Viaduct railway station. The merits of the work seem to be divided between Messrs. Maw & Sons and Messrs. W. B. Simpson & Sons; as to the result perhaps the only thing that can be decisively said about it is that it is very large. We have before pointed out that the blunt edges and wavy uncertain contours of glazed pottery preclude any success in imitating in this material the effect of architectural carved ornament; it must have its own style of design, if it is to be used successfully. A rather similar remark may perhaps apply to Mr. Turpin's elaborate specimen of circular parquetry design laid down in this room; the design is too florid and carpet-like, and does not follow forms natural to wood design. The small stained-glass fire-screen by Messrs. Cox & Sons, to be seen here, is as pretty and suitable a piece of furniture for a room as could be seen; it is a repetition of an idea illustrated by the same firm last year, but with improvement in the treatment of the wood framing.

The specimens of embroidery from the School of Art-needlework fill two cases, with large pieces of work in very bright and rich materials, the designs partaking chiefly of the character of large floral spray patterns: the whole are stated to be shown "as examples of artistic work," and not of mere manual skill. The artistic element here, however, is not so prominent as this profession would seem to indicate that it should be; and we should say the handiwork was better than the design. The smaller pieces, borders, &c., show the most taste.

As specimens of high-class ornamental design and art-workmanship, it would be difficult to surpass the damascened work of Zuloaga, lent by Mr. Morrison. All the qualities which should characterise good ornament are present in this work, in which the symmetry and finish of Renaissance design are combined with a richness and effectiveness of tone and general treatment rather characteristic of Gothic work. The execution is really faultless; and there can be no question that in these specimens of a form of art but little practised at present we have some of the finest modern art-work to be found in any school or country.

THE METROPOLITAN BUILDINGS AND MANAGEMENT BILL.

SINCE the inquiry was commenced before the Select Committee of the House of Commons, various parties have attended the committee of the Board of Works, and the Board, in consequence, have determined on a variety of amendments, and submitted them, in a printed form, to the select committee. Some opposition will be removed by the alterations which have been made.

All the clauses relating to "fire-resisting" buildings are taken out. A clause authorising the Royal Institute of British Architects to examine candidates, and grant certificates to persons competent to perform the duties of surveyors of the Board under the new Act, is inserted; and the clause of the present Act which entitles a district surveyor, if prevented from attending to the duties of his office, to appoint, with the consent of the Board, some other person as his deputy, is brought back.

Tuesday last was occupied by the examination of Captain Shaw, of the Metropolitan Fire Brigade, who spoke strongly in favour of the adoption of those clauses in the Bill with reference to the construction of buildings for the purpose of preventing fires. At the close of Captain Shaw's evidence, the Committee adjourned until Thursday, when evidence on behalf of the promoters of the Bill was again taken, and the Committee further adjourned until Monday next, when the investigation will be resumed.

FARMSTEADS AND FARMHOUSES.

ARCHITECTURAL ASSOCIATION.

AT an ordinary general meeting of the members, held last Friday evening, the 29th ultimo, Mr. H. C. Boyes in the chair, Mr. Chapman Field was elected a member.

The Secretary (Mr. Bowes A. Paice) announced that Mr. E. J. Tarver, President of the Association, had been nominated to represent them at the forthcoming Conference to be held at the Royal Institute of British Architects; and that during the Conference week there would be a meeting of the Architectural Alliance, the committee being Mr. Phené Spiers, Mr. Roger Smith, Mr. Rickman, and Mr. J. Douglass Mathews.

Mr. Colville Browne, M.R.A.C., then read a paper on "Farmsteads and Farmhouses." In the course of his remarks he said that unfortunately architects were seldom called upon to design entirely new sets of buildings, additions being generally carried out to buildings under repair. He would first note the principles in view, and then pass on to the consideration of the manner in which the work should be carried

out. Farming might be divided into five classes: 1. Pastoral, which comprised breeding and rearing; thus sheep-farms in the Highlands, that of cattle in the Lowlands. Although very extensive generally, these farms needed only the most primitive accommodation, viz., stells, which consisted of double walls, with trees planted inside, shelter being the first consideration; and an enclosure to be used when marking the sheep. 2. Carse farming demanded the next simplest forms of buildings, viz., erections wherein to store the grain grown in the rich level of clays between two hills, such as the Carse of Gowrie. 3. Dairy farming, where more expensive buildings were required. 4. Suburban farming, which was entirely different from any of the foregoing, it very frequently being the best policy to sell the straw in town and cart dung back. A new milk-trade was generally allied to this branch, of which one great feature was economy of litter, a point of great importance, necessitating great care in the planning of the various sheds and yards. 5. Lastly, they had mixed husbandry, or ordinary common farming. The two last were the most important and the most common.

An architect should always bear in mind the five important objects of farm-buildings: (1) the comfort and growth of live stock; (2) the accumulation and preservation of manure; (3) the preparation and storage of grain; (4) the storage of cake, artificial manures, and wool, and duplicates of steam-tackle; and (5) economy of labour, also of straw, roots, and water. The site of the buildings depended upon the size of the farm. Thus, if the occupation be very large, the homesteads should be scattered, and field-barns should be used. With regard to the form of the farm, as a rule the buildings were needed in the centre, but certainly in the centre of the arable land. Variations would arise according to the supply of water as food and power; and with respect to the inclination of the ground, a sheltered site was the most preferable. As straw was the most bulky and heaviest item on the farm, as a matter of course it demanded their first attention, the next bulky item being roots. With regard to the rickyard it should be level, and might be surrounded by an ordinary wall, although a sunken fence was better for circulation. Staddles need not be provided for any crop but wheat, and as a rule they would provide small round staddles in the North, whereas in the South long stacks were the rule. Concerning the covering in a rickyard, this would pay only when the whole of the stacks were brought home, and when the locality was subject in the harvest season to sudden showers. A cost of 1s. 4d. per acre to 1s. 6d. would serve as a basis of calculating the limit of expense in a yard, roofing, &c. The use of the barn was to store grain and prepare it for market, and its size would be regulated by the class of farming; its doors should be wide and high, and the foundations of the building vermin proof. The chaff-house should be partitioned off from the lower barn, over the thrashing-machine.

With respect to the cattle-sheds, byres economised space; and as a caution he would state that too much room in byres enabled the stock to turn round, and so caused inconvenience. Where many young beasts were kept yards should be provided. The turnip-house was convenient for cattle if placed at the end of the boxes, or central to them. As to sties, he would caution them against the very common error of making them too small; but the farrowing fens should be large. The store-sties should be arranged so that a passage should be made into the fold yards, for the convenience of turning the pigs out. The calf-house should be roomy and well ventilated. He concluded by giving a detailed account of the expenses consequent upon what he had urged.

Mr. Phené Spiers, after referring to Mr. Browne's success at the Agricultural College, Cirencester, where he had earned honours, said that there certainly was a great deal to be learned before any of them could attempt to plan a farmstead, as was fully proved by the interesting paper of Mr. Browne.

Mr. S. Flint Clarkson regretted that the question of farmhouses had not been more fully treated of in the paper. It had been stated by Mr. Browne that the cost of the building should be kept as low as possible, and that economy was the main thing to be considered; but, as it was said that certain parts of the building demanded that special cautions should be taken, they could not be treated in a temporary manner.

Mr. Sulman, referring to a point in the paper as to the advantages or disadvantages of covered yards, said that it was a disputed question as to whether covered or uncovered yards were the best. Manure was worth more if the rain was kept from it than otherwise; and it cost less to fatten cattle if they were covered over.

Mr. A. T. Taylor was of opinion that as regarded the decoration and architectural features they could not be introduced into a farmstead. The plainer the building the better, for the farmer would not spend a penny upon ornamental work. With regard to the question of sheds, he thought that it was well to have some covered and some open. In a farmstead a constant supply of water was a matter of great importance; and thorough ventilation in stables was absolutely necessary, this being in a great measure effected by having an opening in each stable above the horses' heads.

The chairman believed that as regarded the question of closed or open yards, it might be arranged to have a large canvas over a yard so as to cover over a portion or the whole of it, as might be required according to the state of the weather. It had been suggested that an architectural feature might be given to buildings of the kind described in the paper; but he had a dread of introducing anything of the kind, for they had suffered enough already by introducing architectural features in buildings intended for such purposes. The more fitted such buildings were for the purposes intended the more picturesque they were.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting, held last Monday evening, the 1st inst., Mr. John Gibson in the chair, the following gentlemen were elected:—Messrs. Robert Anderson and J. G. Turner (Fellows); Messrs. C. G. Maylard and C. W. Richardson (Associates).

The Secretary (Mr. Charles L. Eastlake) read a letter which he had received from Mr. George Godwin relative to the "Owen Jones Memorial," enclosing another letter from the Secretary of the Memorial Committee, requesting the assistance of the Institute in furtherance of the object of the committee.

Mr. Dawson desired to know if the papers which were to be read at the forthcoming Conference of Architects were to be printed before the days of meeting? It was scarcely practicable, he considered, for discussions to take place upon the subjects to be brought forward unless some intimation were given of the nature of the papers to be treated. He alluded especially to the notice called the Report of the Conference Committee.

Mr. Eastlake, in reply, said that the principal papers to be read were entitled, "Professional Education," "Professional Practice," and "Architectural Art." In consequence of their brevity, they would take but little time to read, so that plenty of discussion was fully expected upon them. The question of printing the papers had come before the committee, and they had decided that such printing should be done.

Mr. Gates thought it desirable that the report of the committee should be in the hands of the members before the first day of the meeting of the Conference, and they might have an opportunity of preparing themselves to comment upon it. He believed that it was the intention of the committee to send their report to the council.

Mr. T. H. Eagles (associate) then read his Institute Prize Essay on "Vaulting."

In the discussion which followed, Mr. Phené Spiers said that the ribs in French vaults were almost always domical, the setting of domical curves being an easy matter. Besides the instances given by Mr. Eagles, there were one or two other vaults worthy of mention. At the church of St. Pierre, at Bernard, there were some elaborate examples to be seen, and in France, generally speaking, there were several fair examples of vaulting. In Westminster Abbey it was found more convenient to cut both the ribs and the web out of the same stone. As to the statement that the first germ of the clustered six was given in the nave aisles of Peterborough Cathedral, he thought that this was incorrect, as the clustered pier was taken from the union of several orders of architecture.

Mr. Dawson said that with respect to curvatures, it appeared to him that the differences that were met with in them could easily be overcome.

Mr. Morris considered that the subject which had been treated was of an excellent character, although a difficult one; and he trusted that Mr. Eagles would continue the interesting subject at some other time. He thought that if Mr. Eagles had gone further into the question of Roman works, so as to develop their tendency to the rib drawings, and the way in which they applied their centering, it would have been as well. He considered that very beautiful work was done by the Romans. Coming to the work of the English, he was hardly aware that the Normans ever really mastered the subject. He did not know that there was any standing example of an English cathedral vaulted during the twelfth century. There were some examples of vault shafts very frequently found in Norman work; but he was not aware that any such cathedral existed. The question then arose as to whether the Norman builder really filled in the vault, or whether it was his intention simply to throw a gable of brick or stone. If it was only to throw a gable, it would tally much with the simple arch, whether it was the intention of the Norman builders to satisfy this by throwing the gable, with the rib, perhaps, in two parts, with a sort of double moulding, and so roof the naves of the church in the same way that the halls of the Welsh Castles were covered in. Since Mr. Godwin's time to the present, there had been very few prize essays that had been presented to the Institute that were worthy of any commendation at all, and for that reason Mr. Eagle's efforts were very commendable. The subject was one that justified and required more ample illustration. If there was one point more than another in which the Institute was weak, it was in the preparation of papers; and therefore he (Mr. Morris), believed that it would be well to encourage successful essayists like the one they had just listened to, and who had that night set such an excellent example.

The chairman remarked that if the subject were pursued further, great good would result therefrom. Speaking for himself, in his earlier days, he had had a considerable amount of vaulting work to do; and had also assisted Sir Charles Barry in the building of the Houses of Parliament, where every stone had to be set out geometrically, and he thought that it would be a good thing if some members would go into the question more fully, and give papers on the subject. Whilst on the subject of papers, he would recommend the members to furnish more papers having reference to construction, than were generally given; for he believed that the very element of their art was to be founded upon constructive appliances. He then announced that on Monday, the 15th inst., would be held the closing meeting of the session and the opening meeting of the Conference, when the distribution of the Institute prizes and medals would take place.

ST. MARYLEBONE NEW SWIMMING BATH.

THIS building is now open to the public. It is situated in Seymour-place, New-road, and forms an addition to the already existing bathing establishment of St. Marylebone Vestry.

The bath-room is 85 ft. long, 41 ft. wide, and 28 ft. in height from the platform round the bath to the apex of the roof. The sides of the room longitudinally have deeply-recessed arched openings, which contain the dressing-boxes, averaging 4 ft. 3 in. long and 3 ft. 6 in. wide. All the fittings of these boxes are of ebony, and the metal-work is electro-plated. The arcading is continued along the end walls, and the recesses in this instance are filled in with ornamental tile-work. The piers of all the arches have three panels, filled in with blue hand-painted tiles, with variously-designed representations of birds, fishes, and water-fowl.

The roof is supported by cast-iron semi-elliptic ribs, ornamented with gilded scroll-work panels. The size of the bath itself is 73 ft. by 26 ft., and depth of water 6 ft. shelving up to 4 ft. 6 in. The diving-board is 9 ft. above the water, and there is another spring diving-board 5 ft. lower. The bottom and sides of the bath are covered with glazed tiling in variously-designed patterns, and the hand-painted tile border above the water-line, 21 in. wide, forms a novel feature in the building, representing, as it does, the appearance of an aquarium, with fishes and rock-work, all of which have been sketched at the Brighton Aquarium for this work.

The interior of the building is decorated

with Pompeiian ornament. The architect is Mr. H. Saxon Snell. Mr. Raymond Smith is executing the marble fountain which will be placed at the east end of the bath. The tile-work has been executed by Messrs. Simpson & Sons, and the other decorations are by Messrs. Green & King. The builders are Messrs. Perry Brothers, whose contract for the execution of the whole of the works, including fittings, amounts to 4,250*l.* Mr. Butler is the clerk of works.

THE INNER CIRCLE RAILWAY AND THE PROPOSED NEW STREETS.

So far as the investigation of the measure had proceeded up to the time when the Committee adjourned, it was manifest that the opposition to be brought forward against the Bill would be mainly based upon the improbability of the promoters being able to raise the large capital set down as the sum which will be required to carry out the undertaking. The proposed share capital is 2,700,000*l.*, in addition to borrowing powers to the extent of 900,000*l.*, for a proposed line of railway no more than four miles and thirty-five chains in length; and it is therefore not surprising that the committee have already clearly intimated that they will require satisfactory evidence that the proposed capital may reasonably be expected to be raised. Under the circumstances the decision at which the City authorities, and also the Metropolitan Board of Works, have now finally arrived, with reference to the project, will be regarded by the promoters as highly in their favour. The Metropolitan Board of Works and the Commissioners of Sewers will, in fact, now appear before the Parliamentary Committee in the capacity of substantial supporters of the Bill to the extent of 500,000*l.*, the Board of Works being resolved to contribute 370,000*l.* towards the proposed new street from King William-street to Fenchurch-street, included in the proposed works, whilst the Commissioners of Sewers will contribute 130,000*l.* towards widening King William-street, Fenchurch-street, and Aldgate. These two sums amount, as it will be seen, to nearly one-fifth of the whole of the proposed share capital, and when the fact is given in evidence, it is only reasonable to suppose that it must have considerable influence with the Committee as to the *bond fide* character of the undertaking.

PROPOSED AQUARIUM FOR BIRMINGHAM.

A SPECIAL meeting of the members of the Birmingham Natural History and Microscopical Society is about to be held at the Midland Institute for the purpose of receiving and considering a report upon the advisability of establishing a Marine Aquarium at Birmingham. The report is the work of a sub-committee of the Society, who addressed a circular to the promoters and superintendents of existing and projected Aquaria, both in England and abroad, as to the cost, management, &c., of such establishments. Direct replies were received from only two English aquaria and two foreign ones. Visits were paid to the Crystal Palace and Brighton, and in the report the information is summarised. The committee found two distinct systems in use, the one illustrated at Brighton, Berlin, and Vienna; the other at Hamburg, the Crystal Palace, and the Jardin d'Acclimatation in Paris. These two systems are in England fairly typified at Brighton and Sydenham respectively. In the former there is no actual circulation from one tank to another, and aëration is accomplished by pumping air into the water. In the latter, on the contrary, a constant circulation is maintained night and day from one tank to another; while aëration is effected by carrying down myriads of air-bubbles, so minute that they float long about the tank before rising to the surface, and present an enormous oxidising surface to the water, so that its whole mass has a bright, sparkling, almost effervescent appearance. Unfortunately, in the opinion of many competent persons, the Brighton Aquarium is, zoologically considered, by no means a success; the mortality among the animals is said to be great; the tanks are often turbid; and sooner or later a general reconstruction of the establishment will probably be necessary. On the other hand, the Hamburg establishment is eminently healthy and successful; and from their own careful examination of the Crystal Palace Aquarium, the committee testify to its eminent success in a biological point of view. The committee conclude, therefore, that the system of which these two Aquaria are examples, and which is to be also adopted at the projected establishments of Manchester and Southport, is right in principle and effective in practice; while that of which Brighton is a type is essentially faulty in theory and unsuccessful in practice.

The committee find that the capital invested at Berlin is 65,000*l.*; at Vienna, 34,000*l.*; at Brighton, nearly 100,000*l.*; while the projected companies of Liverpool, Great Yarmouth, Ramsgate, and Southport propose to raise, respectively, the sums of 60,000*l.*, 50,000*l.*, 40,000*l.*, and 60,000*l.*

The committee finally suggest that, in carrying out the scheme of an Aquarium in Birmingham, the alternatives which the promoters will have first to consider are:—1st. Its establishment on a small scale, success depending solely on its attractions as a scientific and educational institution. 2nd. Its formation on a much larger scale, the addition of other attractions and sources of revenue being then admitted to be necessary for pecuniary success. In either case the committee say it will be important to consider whether the scheme shall be carried out in connexion with any existing institution or place of public resort, an extra fee for admission being payable to the Aquarium.

THE NEW RAILWAY BETWEEN LONDON AND MAIDSTONE.

THE new railway between Sevenoaks and Maidstone, which has been constructed by the Sevenoaks, Maidstone, and Tonbridge Railway Company, and which was opened on Monday last, places the London, Chatham, and Dover Company in direct competition with the South Eastern Company, as regards the traffic between London and Maidstone, the working of the new line having been handed over to the London, Chatham, and Dover Company, and as the new route is between two and three miles shorter than that by the South Eastern line, the Chatham and Dover Company have, of course, an advantage. Mr. Bouch, C.E., of Edinburgh, the engineer for the Great Forth Bridge Railway project, is the engineer for the new line to Maidstone, which is 15½ miles long from its commencement by a junction at Otford with the Swanley and Sevenoaks branch, to the town of Maidstone, and the whole of the works, including stations and other buildings, have all been executed by Messrs. John Aird & Sons, of Belvidere-road, Mr. Wood being the resident engineer acting for Mr. Bouch. The heaviest portion of the undertaking was the viaduct over the Medway at Maidstone, involving engineering work of considerable magnitude. This structure consists of a wrought-iron bowstring bridge of 113 ft. span, carried at an elevation of 38 ft. above the water level, together with seven brick arches of 36 ft. span each.

THE DRAINAGE OF BRIGHTON.

THE mayor, aldermen, and town councillors of Brighton, the chairman and members of the incorporate district of Hove, and the members of the Brighton Sewers Board, have made a visit of inspection to the great intercepting sewer designed by Sir John Hawkshaw, which will convey all the drainage of Brighton, Hove, and Preston parishes to a point of discharge nine miles eastward from the new West Brighton Estate, and seven miles eastward from the eastern intercepting inlet, where the bulk of the Brighton sewage will be admitted. The work is about to come into actual use. The western end of the sewer, from East Hove to the centre of Brighton, is 5 ft., and the rest, a length of seven miles, is 7 ft. in diameter. About a mile of this latter portion, from the Chain Pier to beyond Kemp Town, had been illuminated with candles, and the visitors, numbering between sixty and seventy, walked through it. From Kemp Town the party rode to Portobello, where they descended from the level of the roadway to the penstock chamber—an immense excavation of nearly 120 ft. in depth, lined with thick brickwork, and having granite and concrete foundations on the tidal level, where the outfall chambers are built. Going along an adit on to the beach, the visitors inspected the actual outfall—an arrangement of pipes issuing from large bell-mouthed constructions, the entire structure being fixed in strong timber framework, covered with masonry and concrete. The party then ascended again to the cliff level, when refreshments were served, and congratulatory speeches made.

The cost of the whole system of drainage for Brighton will probably be from 150,000*l.* to 200,000*l.*

PLANS FOR DWELLINGS FOR THE WORKING CLASSES.

THE directors of the Improved Industrial Dwellings Company desire designs, with descriptive particulars, for dwellings for the industrial classes, to be erected on a large site in Goswell-road, as notified in our advertising columns, and they offer premiums of 250*l.* and 150*l.* for the first and second best plans. The great object of the Society is to obtain plans for building decent dwellings at a low cost, and we sincerely hope their endeavours may prove successful.

The following particulars relating to construction are to be observed:—

(*a.*) The dwellings must be self-contained, with the entrance-door opening to the external air.

(*b.*) Each dwelling must be so arranged that a free current of external air can be passed through the dwelling by opening the doors and windows.

(*c.*) The staircases must be external.

(*d.*) The roofs are to be flat, and access to the same is to be provided.

(*e.*) The buildings must not be carried to a greater height than five stories above the basements, if any, and no rooms are to be less in height than 8 ft. 6 in. between floor and ceiling.

(*f.*) Dwellings of three, four, and five rooms each are to be provided, including kitchen or scullery. Shops, with rooms attached, are to be provided on the ground-floor in Goswell-road frontage, having the principal entrance from Goswell-road, and separated from the dwellings over by a fireproof ceiling. Each dwelling is to be provided with separate domestic conveniences.

(*g.*) As a moderate return upon the cost of the buildings must be obtained, economy of construction, combined with strength and durability, will be one of the principal points to be considered in judging the merits of designs. Economy of repairs and good sanitary arrangements are absolutely essential.

The designs, with description and other information required, are to be sent in to the offices of the Company before the 26th day of October, 1874. The directors do not undertake to carry out either of the two designs which may be selected, nor do they bind themselves to employ in the execution of the works, either of the persons whose designs may be so selected.

THE DICTIONARY OF ARCHITECTURE.

A SPECIAL meeting of the Architectural Publication Society was held at No. 9, Conduit-street, Regent-street, on Thursday, 21st of May, 1874. Mr. Thomas Henry Wyatt in the chair. The honorary secretary, Mr. Arthur Cates, read a report and balance-sheet which, on the motion of the chairman, were received and adopted. The report said:—

"The work having first originated with Mr. Wyatt Papworth, and having been conducted by him from the commencement, the committee desired to facilitate in every way his continuing to act as editor; but as his engrossing occupations appeared not to diminish, it became necessary to seek for some other aid to supply his place. It then became evident that the rate of payment allowed to the editor for obtaining primary articles to form the foundation of the text—2*l.* per page—was in fact but a nominal remuneration, and that it was solely by the freely-given aid of those learned friends whose loss the Society has from year to year lamented, and by the liberal sacrifice of his own time, that Mr. Papworth had been enabled to carry on the work; and that, in reliance on a continuation of a similar state of things, the estimate of ultimate cost had been made.

While the committee had this under anxious consideration, and sought to devise means whereby funds could be obtained by donation, subscription, or otherwise, to secure to Mr. Papworth, or another editor, a reasonable remuneration for his valuable services, a communication was received from him, stating that he would shortly be at liberty to renew his labours on the Dictionary on the understanding of 1869; not, however, binding himself as to the time of completion, as he could not set aside professional engagements in favour of unremunerated labour: he also stated that an additional payment of half a guinea per printed page would facilitate the progress of the work, which may take five years, more or less, to complete.

There is now in hand an available cash balance of 1,290*l.* The amount due from subscribers paying by instalments, the collection of which has been for a time suspended, is about 500*l.*, and the value of fifty copies still remaining unsubscribed for, at twenty guineas each, would be 1,050*l.*, thus making the fund ultimately available about 2,840*l.* The estimated expenditure, including the additional half-guinea per page, would be about 3,060*l.*, showing a certain deficiency of about 240*l.*, which might be readily met by subscription as the completion of the work approaches.

With this sum in hand, the certainty that no further funds can be raised while the work stands still, and the assurances of Mr. Papworth that, with the offers of assistance from many quarters, he is encouraged to go hopefully forward, the committee would submit to the subscribers the expediency of at once increasing the rate of payment for text to 1*l.* 11*s.* 6*d.* per page, and of requesting

Mr. Papworth to devote himself to hastening the production of the work."

The chairman then moved the following resolutions:—

1. That the report and balance-sheet now read be received and adopted.
2. That the committee be authorised to proceed forthwith with the production of the "Dictionary of Architecture," in accordance with the recommendations of such report.
3. That the moneys now in hand and those to be hereafter received be appropriated towards forwarding the completion of the "Dictionary of Architecture."
4. That in the event of any deficiency ultimately arising, the required amount be raised by the equal contributions of the subscribers, and those members only who may so contribute to be entitled to receive the portions produced by means of such contributions.
5. That any subscribers under the proposals of 1869 and 1870, who, under the altered circumstances, may desire to withdraw, shall, on returning uninjured the parts which have been issued to them, receive back the subscriptions they have paid.
6. That from this time the price of the "Dictionary of Architecture," including all which may hereafter be published by means of the present available funds, shall be twenty guineas,—21*l*.

In the discussion which ensued, Mr. Sydney Smirke, R.A., Professor Hayter Lewis, Mr. O. Hansard, Mr. C. C. Nelson, Mr. T. H. Wyatt, Mr. T. H. Watson, Mr. Wyatt Papworth, Mr. Arthur Cates, and others, took part, and the resolutions were unanimously adopted. In the course of the proceedings it was suggested that, as had been done on former occasions, a list of words or articles should be issued with the next part, and information invited; and it was urged that each individual subscriber might add to the value of the Dictionary by forwarding to the Committee such special information as he might possess.

The following gentlemen were elected as the committee and officers:—

Honorary Committee.—E. M. Barry, R.A., David Bryce, Decimus Burton, Benjamin Ferrey, George Godwin, A. J. Beresford Hope, M.P., Edward I'Anson, Sir C. Lanyon, T. Gambier Parry, J. A. Picton, T. H. Wyatt.
Acting Committee.—G. Aitchison, J. McVicar Anderson, A. W. Blomfield, F. P. Cockerell, George Corson, T. L. Donaldson, Octavius Hansard, Horace Jones, Professor Robert Kerr, Professor T. H. Lewis, Augustus Morant, C. C. Nelson, H. R. Newton, Wyatt Papworth, James Salmon, Sydney Smirke, R.A., Alfred Waterhouse, T. H. Watson, John Whichcord, Thomas Worthington.
Auditors.—T. H. Watson, Charles Pink.
Honorary Treasurer.—Sydney Smirke, R.A.
Honorary Secretary.—Arthur Cates.

And after a cordial vote of thanks to the chairman for his able conduct of the business, the meeting separated.

GENERAL CONFERENCE OF ARCHITECTS, 1874.

THE opening meeting of the Conference invited by the Council of the Royal Institute of British Architects, will take place at 8 p.m. on Monday, the 15th of June, and will be followed by other meetings on the 16th, 17th, and 18th. The proceedings will terminate on the 19th with a public dinner.

Each Architectural Society in the United Kingdom is invited to send a delegate to represent it officially at the Conference.

During the Conference an exhibition will be held of architectural designs and drawings, for which prizes have been awarded by the Institute. Of the value of this we are doubtful.

The time occupied by the Conference will be allotted as follows:—The first meeting will be devoted to opening remarks by the President; presentation of the Royal Gold Medal, and Institute prizes. On the second day the subject for discussion is "The Education of Architects": paper by Professor Lewis. Third day, "The Professional Responsibilities of Architects": paper by Professor Kerr; report of Conference Committee on "The Employment of Surveyors." And, on the fourth day, "The recent Reaction of Taste in English Architecture": paper by Mr. J. J. Stevenson.

The following members of the Institute are appointed to act as hon. secretaries to superintend the exhibition of R. I. B. A. Prize Drawings:—T. Talbot Bury, Fellow; J. D. Mathews, Associate. Arrangements for public dinner, O. Hansard, Fellow; C. H. Cooke, Fellow. Arrangements for visits to public buildings, H. Currey, Vice-president; T. Roger Smith, Fellow.

The New Barracks, Guildford.—The War Department being about to commence building the barracks for the Guildford military depôt centre at Stoughton Farm, recently advertised for bricklayers and labourers, to begin work on June 1st.

BRITISH ARCHITECTURE AND CLIMATE.

THE difference between the motives of Classic architecture and of that which we term Gothic is so marked, and, we may add, so well known, that it may at first seem trite to dwell upon the subject. Yet there are some considerations on which, even if they are not absolutely novel, it is worth while to reflect. By tracing the connexion that exists between very simple matters, fresh value is often given to each; and it seems to us not only that the disputes between what is called Classic and Gothic taste are capable of being narrowed to very close limits, but that a very luminous suggestion as to the direction in which we should seek for the development of an appropriate national style of architecture is to be derived from the study we now propose.

We shall probably carry with us the assent of all our architectural readers in saying that the main difference between the motives of the two styles to which we refer, as exemplified in the most characteristic buildings, such as temples, churches, and palaces, arises from the requirements of climate. In Greece and in Italy, the greatest enjoyment of life is *al fresco*, or in the open air; *sub dio*, as the Romans called it. The order of festivals in all ancient religions that prevailed around the shores of the Mediterranean had reference to this habit of the people. The burlesque Roman saturnalia, in which the world was for a few days turned upside down, was a winter festival. It was, indeed, one proper for the wintry season, and its rude and boisterous mirth is hardly to be recognised under the name of Christmas, by which festivity the Popes at once replaced and commemorated the saturnalia. But the great solemn festivals of the year fell between the months of April and September. In Palestine, the limits were fixed by the important solemnities of Easter and of the Feast of Tabernacles. In Italy, to the present hour, all the local *feste* are held during the same balmy season. And the importance of the moon, as enabling the worshippers to prolong this gathering, or to seek their homes, without being surprised by the darkness of the night, was recognised in the fact that the early division of the year, for all sacred purposes, was into lunar months.

The architecture which, in the temples of Greece, attained a degree of artistic symmetry and delicacy of detail that impresses us with a sense of the sublime, was developed in exact accordance with the habits of a summer-loving people. If we look at one of those rude stone calendars, a representation of which may be found in such writers as Scaliger, under the title, "Hemerologium Anni Julii," we shall see the emptiness of the winter months, as to festival days, contrasted with the full consecration of the summer months to that species of worship that was associated with out-of-door festivity. Thus in July, after the three *dies nefasti*, which followed the Kalends, almost every day is marked with the word *Ludi*. September is nearly as full of fête days; each of these two months containing a series of four days of *Ludi circenses*, when the people were entertained in the amphitheatres.

This mode and habit of life found its appropriate expression in the architecture of the country. Temple or theatre, — the public buildings which formed the nuclei of the great summer gatherings were vast, uniform, and simple. For the one purpose of common worship or common enjoyment, a great court or hall was required, separated from the outer world by a barrier that should not exclude the sight of what was going on within, or even surrounded by special accommodation for spectators. Thus we have the *cella* and the *peristyle*, the home for the God, or shelter for the sacred symbols; the altar before the fence; and, for the worshippers, that shelter from the vertical rays of the sun, which is the first necessity for enjoyment, or even for safety, in the rainless summer of Italy.

Under these conditions it is easy to understand the grand simplicity of the Classic style. Buildings required for such purposes as we have mentioned were of a magnitude and a grandeur that ennoble their ruins, and have preserved their types unchanged down to our own time. The great temple at Pæstum might even now be used for worship. But the domestic architecture was of a less colossal character; and the ravages of war, earthquake, and decay would have left us with comparatively little knowledge of this part of the ancient art, but for the full details that the ashes of Vesuvius have preserved within the walls of Pompeii.

The point in which this motive of Classic architecture especially concerns our present inquiry is, that there was nothing to demand anything inconsistent with unity of order. However magnificent a building, there was, in fact, neither need nor room for distinct stories. Even in domestic buildings, where bed-chambers were requisite, the mode in which they are packed away into odd corners so as not to interfere with the fullest possible development being given to the *nobile piano*—the reception-rooms, in which the Latins lived so much in public,—is something extremely different from either the taste, or the sanitary requirements of the actual civilisation of the West. To this hour Italians of wealth and rank often content themselves with sleeping apartments which few London servants would for a moment consent to occupy.

With the unsettled climate of this country, of the north of Europe, and of great part of France, the conditions under which the architect works are entirely changed. Winter here bears so much more important a relation to summer, and the uncertainty of the seasons is so much more pressing than the regularity, that our houses and public buildings have to meet conditions not present in Italy. If we depended on fair weather for our religious ceremonials, they would be rudely shorn and clipped of their dignity. Even if we were content to restrict our festivals and great assemblages to the summer, we should obtain no certitude by so doing. In fact, July, which we have seen to be the chief festival month of the ancient Roman calendar, is with us the wettest month of the year, according to the testimony of the rain gauges, with the sole exception of February.

Here, again, we have to contend with an architectural difficulty unknown in Italy. The northern architect has to contend with snow. We do not mean to say that snow is unknown in Italy. It may be seen resting on the lofty summit of Apennine or Alp, even when it is undreamed of in England. But snow, as a force to be provided against by the architect, is unknown, except in those sub-Alpine districts in which the domestic architecture is not of a southern, but of a northern type. Snow weighting the roof, slowly melting, and trying the resisting power of every joint in the roof, the gutters, the pipes, and the walls—frost riving the water-channels, and thus providing for plentiful troubles when the temperature rises,—these things are practically unknown on the shores of the Mediterranean. In a long residence in an Italian palazzo, during the course of which we have seen the red hot lava of Vesuvius contending with the snow that covered the cone, we have had, on one or two occasions, to send labourers to clear the roof. But it was to clear it, not of snow, but of the drifted and thickly-falling ashes of the volcano, which soon attained a depth of several inches over the level surface of the terraced roof.

It is thus that the architect in England has always had before him a very different case of the general structural problem from that which has been solved by his classical predecessors. The English architect has had to house the people, and he has done so, at all events, in such a manner as to endow the English language with a word which will be sought in vain in the French or the Italian tongues. *Chez moi*, and *a la casa* are very imperfect translations of the dear English word, HOME.

The people of this country pass, and to a great degree necessarily pass, a large proportion of their time within doors. In the first place, all, except the most wofully destitute, sleep within doors. This is far from being the case in Italy for a large portion of the year. With us, as at any time shelter may be suddenly necessary from rain, the domestic architecture must be so ordered that the general occupations of life may be carried on within doors; and this applies to public as well as to private buildings. Thus our churches and theatres have, of necessity, a totally different type impressed upon them from the temples of Classic times. It is for this reason, no doubt, that the basilica came to be the form of building selected for Christian assemblies, when Constantine called upon the persecuted creed to put on "her silver slippers." Justice, in Roman antiquity, had a stern sense of duty in her ministry. Justice would not be satisfied by a summer celebration alone. It was, therefore, necessary to provide courts for the administration of justice, which should at

all times be available for the shelter of the judges and of those interested in their judgments. Thus the basilica took its place; at first rather a humble one, by the side of the fane. And thus, when weekly or daily services were openly allowed and encouraged, the basilica, ready to hand, offered a proper home for the ministrations of the new clergy.

As population expanded, as cities became fuller of inhabitants, as that ever-quickening rush, which we call civilisation, began to be felt in the towns and large villages of this country, the requirements of the people and of the climate called forth not only the skill, but the genius, of the architect. We do not know very much of the form of the halls of our Saxon ancestors, but we know something about them. We have, however, a constant, everywhere present, illustration of a form of building far older, in this country, than the first arrival of the Saxons. We can compare some of the representations given by the conquering Roman, on the *rilievi* sculptured on the columns reared in their own capital, with the annual reproductions of the same unchanged forms throughout our country districts. We allude to the hay-stack and the wheat rick. We find these temporary structures, in every county, in two distinct shapes—sometimes one, sometimes the other, generally both side by side. One is an oblong parallelogram, with a gabled roof; the other is a round pile, with a conical roof. There they are beneath our eyes at this day—in the very forms given to our *tuguria* on the column of Trajan. In the hay-stack we have the undying tradition of the earliest form of house-building in this country.

The great requirement that pressed upon the architect, when population became numerous, and when urban habits became more prevalent, was how to obtain as much shelter within as little area as possible. This difficulty necessarily led to the development of what we call the stories. By superposing different planes of abode under one roof, economy, convenience, and comfort were promoted. It is not that we claim the invention of stories for northern architecture: they existed and exist elsewhere. But there was a call for this construction, and thus a development of their arrangement, in the shifty, wintry, snowy countries north of the Alps, which did not obtain by the shores of the Mediterranean.

It is here that those great artists who reared our churches and cathedrals from the date of the Conquest to that of the Stuart kings, the presence of a motive not felt by the architects of Greece, begat a new architectural feature, adopted at once for utility and for beauty. Under the impulse of genius, Gothic art lent itself to the requirements of the northern climate. The great rule of Classic art was the unity of order. Gothic art first showed how order might be superposed above order, and story above story, without departing from a grand and harmonious unity, in the structure considered as a whole.

We are not about to urge that the Gothic architects went to nature for their model, and that their lofty aisles are direct imitations of the avenues of the forests; or that their clustered shafts and far-spreading ribs are the simulations in stone of saplings bound together for props, and branches curved and trained into roof beams. There is enough to show that the rib, the great feature that reappears so often, and in such wonderful beauty, especially in Early Decorated work, has been gradually wrought out from the simple structural expedient of thickening portions of the plain semicircular vault. But it is one thing to trace how the mason has improved, decade after decade, in structural skill; and another to deny that the grand old mason-masters of our Gothic times drew much and genuine inspiration from Nature herself. We find in the introduction of foliage a proof of this. And it may well be the case that the more conventionalised are the foliar forms, the deeper has been the study that has stamped them upon the stone.

Whatever be its origin, whether it grew stone by stone under the chisel,—as Mr. Darwin would bid us believe some ancestral sponge grew into an ancestral monkey, and the ancestral monkey into an ancestral man, whom those may claim that like—or whether it was the child of genius and human art, the Gothic style has this much in common with the structure of the vegetable world, that it admits of subordination of scale, and succession of parts; each constructed on a different scale, but all combining into one harmonious whole. The lofty piers, the even and well-poised arches, the superposed triforium, and finally, the ribbed roof of such a building as Westminster Abbey, have in them very much of the natural shrine of the forest. Between the main outlines of chancel or choir, and the delicate tracery of light or canopy, there is as much difference as between the bole of a beech and the fairy-like net-work of its twigs; as much difference, but also as much unity. When the bar tracery came in to supersede the plate tracery, an element of endless diversity was introduced, which is far from being yet wrought out. Subordination of parts to the whole, of the chamber to the hall, of the rood-loft to the nave, of story to story, up to the topmost crockets of the spire, found its perfect expression in tracery. Order may thus be piled above order, in ever decreasing size, to any extent that need or fancy can dictate, and yet the numerous details are but so many lovely parts of one perfect whole.

We are not recommending a slavish imitation of even the best models. We do not want to see an exact reproduction of Tudor, *cinque-cento*, or perpendicular forms. But it is quite another thing for the architect to seek the guidance of that sound principle, under the influence of which the greatest triumphs of his predecessors have been won.

So long as the student is taught that "style is a matter of taste;" so long as he is recommended to search, with unenlightened assiduity, for Classic, Italian, or Gothic examples, to take from each what suits his fancy, and thus to subside either into the grotesque, or the plain joineresque style, as evinced in our "Crystal Palaces"; there is little hope that architecture will resume her true position, as the exponent, and the monumental recorder, of the genius of the time. Or at least, if it be urged that she cannot, under any circumstances, fail in so doing, so much the worse for the genius of to-day. But if the great structural motives supplied by the character of our climate, illustrated by the method in which they have been wrought out by our greatest builders, age after age, be impressed strongly on the mind of the student, we think there is more hope of the emerging of light from darkness, and order from chaos.

ON THE APPLICATION OF WIRES TO REMEDY ACOUSTIC DEFECTS IN PUBLIC BUILDINGS.*

EVERY ONE here has heard something of this lately novel theory, that the application of a few strands of copper wire would seriously affect and modify the body and currents of sound in a public assembly-room. It had its origin first, I believe, in America. I cannot now lay my hands on the proceedings of the American Institute of Architects, in which I first met with it; but those who may be curious in pursuing this subject more exhaustively than I have leisure to do, will, no doubt, find the proceedings of the American Institute I refer to among the papers possessed by our Institute.

I confess I was incredulous to some extent when the theory came before me in the guise of a Transatlantic "notion" only, although I hold in deep respect the practical common-sense character of American architects; but when the efficacy of the theory was forced on me by the success of experiments made in St. Andrew's Church, in this city,—a success unanimously attested by clergy, parishioners, and all parties interested,—I felt constrained to be attentively respectful. There is a moral to be pointed from this circumstance, not out of place here, namely, that there is something akin to irreverence in receiving with anything but grave and respectful attention any theory propounded with reference to great economic laws in this wonderful universe.

Of the many phenomena whose occult laws we still strive to master and fix, those connected with sound,—singularly wonderful, as late experiments have demonstrated them to be, have as yet but little been reduced to system; at least, to such system as enables us architects to apply rough-and-ready conclusions to buildings with which we have to do.

I do not profess to have been a deep student in acoustic science, nor do I presume to instruct you in the first elementary phenomena of it, with which I take every one to be acquainted; but I take you to a building at once, to apply remedies to acoustic defects. I should mention that my attention has been brought to this subject chiefly by the publication of an intelligent and intelligible account of experiments made by the Rev. Robert Samuel Gregg in Mr. Burges's cathedral at Cork. Mr. Gregg has attempted to draw no conclusions from, or theorise on, his experiments; but the phenomena he has recorded appear to me so satisfactorily consistent with what we know of acoustic operations, and with each other, that I feel perfectly convinced of the accuracy, intelligence, and truth of his observations. I fancy, on considering them, I see my way to lay down some general notions as to where to apply wires with some of that reason which, we are told, is required even in "roasting eggs," and not at haphazard, as most of the wire-experimenters appear up to this to have but done.

In considering a building acoustically, you must look on it as embracing but two divisions—one where sound is manufactured, and one where it is consumed. The first division of the building is the place which is occupied by the choir or orchestra, the preacher or public speaker, the actor, the instrumental or vocal soloist, or by any instrument or instruments, human or divine, by which *sound* is manufactured and supplied for the delight, edification, or wearying of other divine instruments with the gift of hearing. The second division of the building is that which contains the hearers.

A stream of sound is to be *projected* from one of these divisions to the other, and it is very important that you should keep this stream of sound clearly in your mind, not as illustrated by the analogy of a simply flowing, gravitating stream, but as one sent forth with a certain initial velocity, such as may be illustrated by a stream from a syringe.

I am obliged to supply names for these two divisions, for brevity in frequent reference, and I propose to call one the *vomitorium*, from which the sound is projected; the other the *auditorium*, where it is to be received. One-half of the building may be occupied by a choir, or it may be it is but the spot where a solitary preacher stands, but this is still the vomitorium for my purposes, and all other space where hearers are placed is the auditorium.

From the vomitorium to the auditorium is, as I have said, to be projected—directed with what initial velocity can be given it towards the auditorium—a stream of sound: 1st, unmarred and unweakened in its inceptive force; 2nd, unimpeded in its course; and, 3rd, unmingled and uncontaminated, as it were, by streams of sound proceeding from, or reflected from, quarters other than the auditorium. This is the whole problem simply put. I use the word stream advisedly as a rough-and-ready, if rather inaccurate, expression for the transmission of sounds.

It is unnecessary for my practical purpose to enter with scientific accuracy into the theory of the transmission of sound-waves, by which term the phenomenon of sound-transit is much more truly expressed. It is simpler for us, I think, to consider the sound with which we have to deal as a volume that is desired to be projected from one place to another, expanding and distributing itself as it goes; and, bearing in mind that while a certain degree of initial strength can be given in one direction more than another by the speaker or singer turning his face in that direction, the tendency of our stream is to expand in all directions from its source, and with a tendency to rise rather than gravitate.

Two agencies are at work to affect the stream from its source to its reflection, and these are Resonance and Reflection. Both, as servants, may be used to assist and reinforce the manufactory of sound at its source; both as masters may mar and pollute the stream. Of building materials, wood is naturally resonant or reinforcing, as is easily understood by the illustration of the body of a fiddle, which does not give the sound itself, but magnifies and reinforces at its birth what the string produces ten thousandfold (as long as it has no "little rift" "that presently will make the music mute"). So if we can call to our aid the resonance of wood so applied as to add force to sound *at its inception*, and not to affect it subsequently, we may call our building "right as a fiddle" in that respect. Materials which are not resonant, but reflecting: that is, calculated in surfaces to inflect or "echo" waves of sound,—are stone, brick, plaster, metal, glass, &c.; and it is not to be forgotten that wood, with its resonant property, can in surface be a reflective agent too, if

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* By Mr. Thomas Drew. Read at meeting of the Architectural Association of Ireland, May 28th, 1874.

somewhat less so than harder or unresonant materials.

First, we have to consider what causes act to weaken the force or mar the sound in the act of being transmitted. It will be simpler for us to suppose the building under consideration one of cathedral character. St. Finbar's, Cork, will serve well to illustrate it; the source of sound a single singer in the centre of the chord of the apse. The case is a typical one, and the principles involved apply to others. The singer endeavouring to project towards his auditory a volume of sound, the issuing sound expands in every direction above and all around, with a certain upward tendency more particularly. All that sound not travelling towards the auditorium is but waste. That which would here be lost, wandering away through the encircling arcade into the ambulatory roofs and up to the choir roof, might, if the singer had a reflecting surface, resonant or otherwise, immediately behind him, be reflected into that forward current toward the auditorium. This space behind and around is an element of *weakness* at the sound "manufactory." As a secondary source of inquiry to the stream of sound, varied reflections from previous streams of sound returning to the singer from the many reflecting surfaces of the ambulatory, may confuse and "blur" the immediately issuing sound; *weakness* in the issue of sound is, however, the distinguishing fact of the circumstances of the case under illustration. Place your singer as before, and give him a solid circular apse wall all around him as a reflecting agent, and you may introduce the element of *confusion* with a vengeance. From a curved surface sufficiently removed from the voice to make the reflection or echo have it perceptibly subsequent to the initial sound, you may expect to find a return of sounds toward the singer converged and reinforced by a principle similar to that which has created the whispering galleries of St. Paul's and Gloucester, which, mingling with the sound arising from his lips, blurs and confuses. . . .

We have considered those agencies which affect the sound at its issue. It is unnecessary for us to dwell on those which directly intercept its transmission, as practically it does not much concern us. These are, for example, such things as the columns or piers within a building which directly intervene between the vomitorium and a part of the auditory. Against such features as these, acoustically considered, much, I think, stupid and unreasoning prejudice is found in some quarters. We pass on to those agencies which affect the current of sound in the course of transmission.

It may be assumed that the initial or direct stream of sound can, theoretically, never reach the auditorium unmingled with reflected waves from preceding currents. The reflected waves from the roof may earliest be considered as affecting the initial current. If the roof is low, and the distance to be traversed by the sound before it is reflected inconsiderable, the reflected sound will be so nearly instantaneous with the initial sound as to be practically identical, and cause no perceptible confusion; but as the roof becomes more distant the interval between the currents becomes more marked,—the sounds in course of transmission, directly, become affected, simply speaking, by the echoes of those which have preceded them; consequently, to a lofty roof we may look as one of the most important agencies in causing acoustic deficiency. The form and material of a roof are also aggravating agencies in confusion of sound. The first will affect the character of the reflected waves, and this detail of the subject time would not permit me to dwell on; the second—material—is of considerable importance. When, in addition to the evil of a lofty roof reflecting sound, you have that roof formed of a resonant material such as wood, strengthening and reinforcing the sound that it reflects, I should consider that as an aggravating element of confusion. In Messrs. Lanyon & Lynn's fine church of St. Andrew, Dublin,—the most acoustically unfortunate church I have ever observed,—the cause of confusion under notice may be observed in a marked form.

The next, and often the most serious, element of confusion arises from those reflected waves of sound which have travelled beyond the auditorium, and are returned to it to mingle with the initial stream. These are, in fact, such echoes or reverberations as return from the unbroken surface of a western wall, an expanse or glass surface in it, or from aisle roofs such as those in St. Finbar's. Of this character is that "rumbling" effect sometimes produced by a great organ apparently in the roofs of a cathedral or great church, and which some people think so grand, but which I feel certain no sensitive musician would wish to hear. In the mingling of the reflected waves of musical sounds with the initial stream, meant for our immediate enjoyment, discord more or less pronounced must prevail.

This brings us to the object we have in view—the application of a remedy against the evils of reflected sound. Hitherto we have known but of one device—namely, that of hanging curtains, as being less reflective, against the western wall of a church or other such surface that we suspected of causing reverberation. Now we have arrived at this remarkable fact, that a strand of wire in a state of tension will break and disperse the wave of sound that passed it. To us, unskilled in the deeper researches of musical and acoustic science, this natural and to us mysterious law seems almost incredible, but we must be constrained by the logic of hard facts.

The explanation given is this—I am indebted for it to an accomplished musical friend—that the wire in tension—you will mark that it *must* be strained—is in a state of perpetual vibration, which has this effect on waves of sound passing it of breaking their current and dispersing them. When this wire is attached to a resonant material such as wood, the vibration, otherwise silent, becomes a tonic one (as before illustrated by a fiddle), and the vibration is sensible to the ear. A familiar example of this is the melancholy mysterious music of the telegraph wires or an Æolian harp. The wooden telegraph posts supply the resonance to the wires. You may learn from this, that in applying wires as a remedy that they must be attached to non-resonant materials, such as stone.

Thoroughly understanding the tendency of this mysterious agency, it does not appear difficult to point out, in a general way, terms where it should be applied. If you have reason to believe reverberation comes from the aisle roofs of such a church as St. Finbar's, place the wires, say, across the arches at their springing, where they will intercept the initial flow of sound towards the roofs, sufficiently high not to intercept any sound directed to the auditory in the aisles. Remember, all sound which has been the vehicle of an idea to an audience is but waste when it has passed it by, and returning to it is but mischievous and contaminating to the pure initial stream. If, then, the reverberating surfaces are found behind the audience, place the wires anywhere beyond it, where they will disperse the sound-wave after it has served its purpose. You must be careful not to make this mistake of placing such a potent interceptor of sound *between* the auditorium and the vomitorium, nor must you use your wires in such proximity to the source of sound as will limit its due expansion. From Mr. Gregg's experiments we observe this remarkable fact, that wires strained immediately over his choir as it were strangled the sound at its birth. We observe also that where they were placed in the nave, between the choir and the organist in the western gallery, while they served to allay the confusion, they caused the body of sound to reach the organist with a remarkably weakened force. Disposed so as to break the waves of sound uselessly travelling into transept and aisle roofs, and against the reflecting surface of western walls, the remedy was effectual.

One word on the subject I have used in illustration, and I have done. St. Finbar's—able as its architect is, charming and admirable as it presents itself on paper to you—has, in execution, in its ugly archaism of detail, its mere clumsiness and want of appreciation of *scale*, sins enough to answer for. If, however, you should be inclined, in admiration of Mr. Burges's masculine force—which, in the abstract, I share with you,—to imitate his work, do not, because a western organ-gallery is the "correct thing" in an "Early French" church, make the west end the location of the organ. If an organ is desired there for processional effects, provide an additional one there; but do not torture the organist and distract the choir, and separate what should be one instantaneous harmony, by placing such a distance between them, fixing the organ in a position which will be the wrong one for the congregation, until they begin to say their prayers consistently with their faces towards the west, or have their ears turned to the backs of their heads.

CARLTON TOWERS, SELBY, YORKSHIRE.

OUR illustration represents the interior of the baronial hall, designed by Mr. Welby Pugin, for Lord Beaumont, and which forms part of the work intended to be added to the Towers.

The restoration of the Stapleton Tower has alone been completed; and the builders, Messrs. Haigh & Co., of Liverpool, are at present engaged in completing the exterior of the State apartments.

NEW SCHOOL, RUSSELL AND RILEY STREETS, BERMONDSEY.

THE designs for this school, to accommodate 210 boys, 210 girls, and 300 infants, were accepted in a select competition, and were prepared by Mr. Joseph James, architect. The form of the site entailed very great difficulties in the arrangements of the plan.

The whole frontage towards Riley-street is 160 ft., about 35 ft. of which are taken up by two small houses, one of which will be appropriated as a care-taker's residence. The breadth in the widest part is only 40 ft. In consequence of the limited nature of the site it was compulsory to provide an open playground on the ground floor, which forms a pleasing feature amongst the warehouses in the surrounding streets. A portion of this is appropriated to the boys, whilst the remainder, together with some extent of open playground, is devoted to the girls and infants.

An entrance for the boys is provided in Russell-street, and that for the girls and infants in Riley-street.

The height of this story is 8 ft. 6 in., the whole being covered with tar paving.

In the rear of the main building is the principal feature of the plan, a staircase, 24 ft. by 7 ft., with treads and risers 12 in. by 6 in., and 5 ft. landings; the boys being quite distinct from the girls and infants. In the rear of this is ample accommodation for hat and bonnet rooms, water-closets, lavatories, &c.

On the first floor is the infant school for 300 children, divided into one large school, 66 ft. 9 in. by 21 ft.; a class-room, 22 ft. by 18 ft.; and a double class-room, 32 ft. by 21 ft.

On the second-floor and third-floor are two school-rooms, 66 ft. 9 in. by 21 ft., and a double class-room, 32 ft. by 21 ft. The whole is covered in with a high-pitched roof. The internal walls of the school-rooms are carried up in finished brick-work, with red brick bands and arches, with a Portland cement dado, 4 ft. high. Care has been taken for obtaining proper ventilation, and the building is warmed by Captain Galton's Patent Stoves.

The height of the covered playground is 8 ft. 6 in.; the first and second story 14 ft. in the clear; the topmost story being 12 ft. up to the wall-plate, and 17 ft. to the collar. The total height outside from pavement to main gables is 74 ft., and about 100 ft. to the top of the vane of the bell turret. The whole building forms a prominent object from the South Eastern Railway. The whole of the works have been carried out by Mr. William Howard, of Chandos-street, and superintended by Mr. William Atkinson, clerk of the works. The Board are about to obtain possession of five houses in Mellick's-place, at the back of the present school, with a frontage of about 57 ft., which will afford space for private rooms for the master and mistress and a manager's room over each covered way to the school. The amount of contract is 5,280*l.*; but there are additional works in the foundation and other places, which have yet to be valued.

JUDGE'S CENSURE ON BUILDERS' PETTY ACTIONS.

IN the case of Lethridge *v.* Rogers, the plaintiff, a carpenter, had been put on a job by Mr. Rogers, a plumber, and when accounts were to be squared up a dispute of 9*l.* arose. For this balance the machinery of the Court of Queen's Bench—a jury, counsel, solicitors, and witnesses—was put in motion.

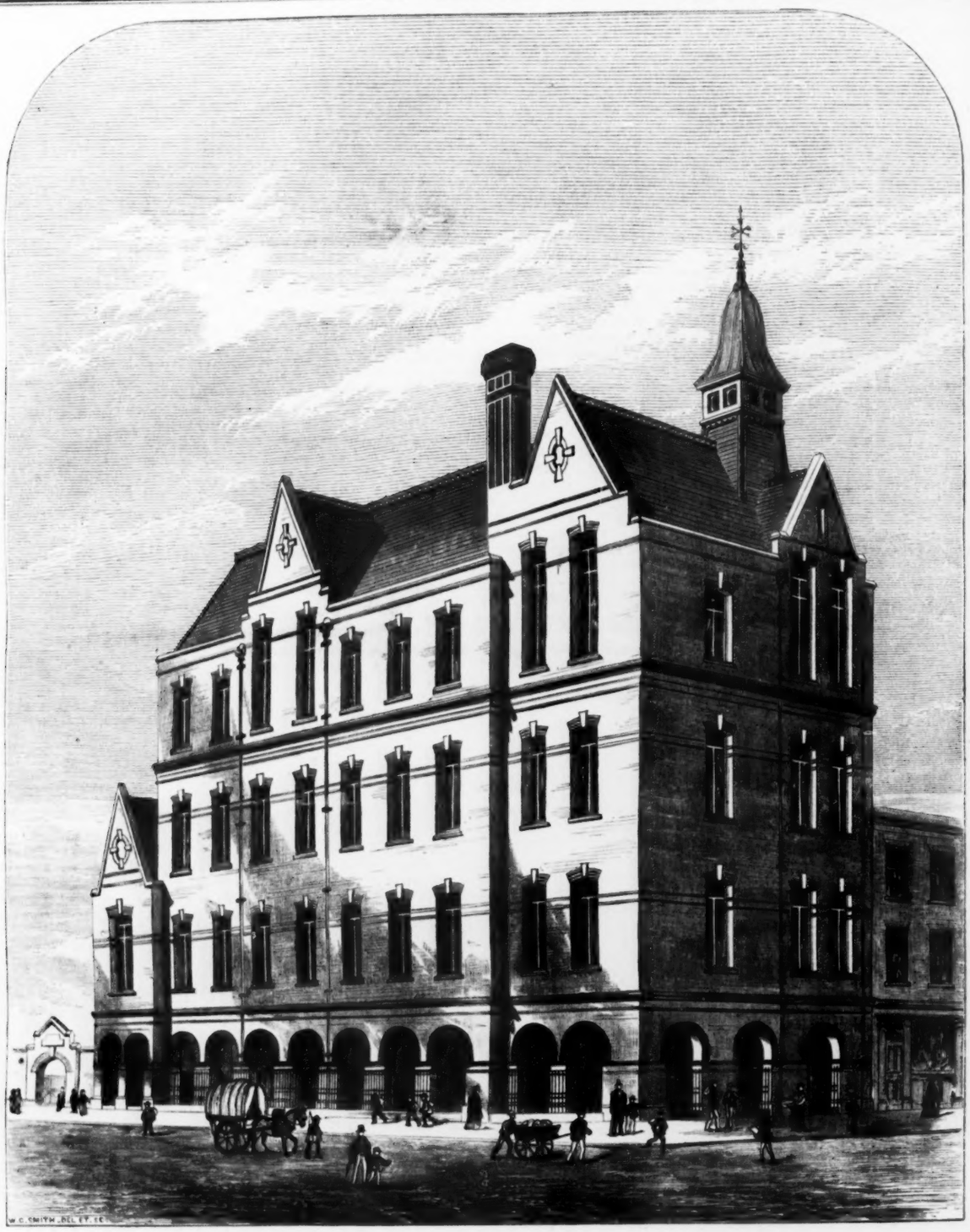
Mr. Justice Denman thus expressed his idea of the litigation:—"Are we to spend the remainder of the week in trying this case?"

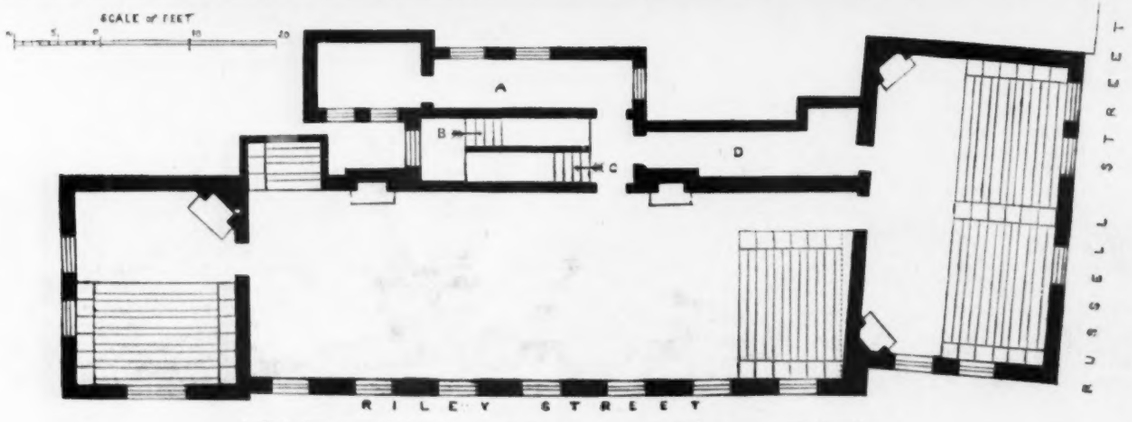
Counsel was afraid they must go through the bills.

The Judge (out of temper): Tut, tut! Go on then, and quickly, for I will take no notes of the evidence. I must really say that it is scandalous that such a case should be tried before a jury, and in a Superior Court.

The items now had to be gone through as to farthings per hour, and amount of time; and eventually the jury returned a verdict in favour of the plaintiff for the 9*l.* in dispute.

This verdict will mulct the plumber in costs—both sides,—but when the costs get taxed the carpenter may have a heavy account to "square" with his solicitor.





A. Hats, Bonnets, and Cloaks. B. Boys, up. C. Girls, up. D. Corridor.

SCHOOL-BOARD SCHOOLS, RILEY STREET, BERMONDSEY.—MR. JOSEPH JAMES, ARCHITECT.

CARLTON TOWERS, SELBY, YORKSHIRE: PROPOSED HALL.—MR. WELBY PUGIN, ARCHITECT.

HUGHES'S PATENT TRAMWAY.

A PUBLIC trial of the overhead tramway, patented by Mr. E. W. Hughes, has taken place at the Midland Railway Company's Depot, Wandsworth-road station. A large number of people witnessed the experiment. The tramway is specially designed for the rapid and economical conveyance of ores, coal, and merchandise generally from outlying mines and hilly districts to the nearest railways, canals, and rivers, or for shipment by sea. It is not meant to be worked on a level, yet no stationary engine or hauling rope is required, except on very steep gradients. Being simple in construction, it requires no skilled labour to erect, excepting the supervision of a competent engineer, and no earthwork, fences, or bridges are requisite. For an ordinary length of three miles, worked by gravitation, for the carriage of five hundred tons of minerals per day, the cost of the tramway will not, it is stated, exceed 2,000*l.* per mile, and where the conditions are favourable the cost will be less. Besides, it can be moved about from one part of a district to another at comparatively small cost. A platform was erected to represent artificially the gradients of a mountain. The level was 25 ft., and the gradients were 1 in 30 for 20 ft., and 1 in 15 for 80 ft. The engine, which weighs less than four tons, travelled along the graduated platform at the rate of twelve miles an hour, and it is computed that it can maintain that rate of speed up steep gradients with a load of 25 tons each journey. The consumption of fuel is equal to about 8 lb. per horse-power. Lines of tramways on this system can, if desired, be erected for mineral owners, they guaranteeing a minimum traffic for a period to be agreed upon. The engine used was designed by Mr. J. W. Dudley, civil engineer, and was manufactured by Messrs. Alexander Wilson & Co., of the Vauxhall Iron Works.

"THE CAUSES OF ART."

ON Thursday evening (May 21st), Mr. John S. Phené, F.S.A., delivered a lecture to the Society for the Encouragement of the Fine Arts "On the Causes of Art." The subject was introduced in a somewhat novel manner. Commencing with the earliest indication of human production, and wishing, as he said, to compare art, all over the globe, in its various stages, a plan which would compel a rapid transition from place to place, in a very ungeographical manner, the lecturer proceeded to illustrate his subject by a plan framed on that of the French International Exhibition of 1867. He represented the stream of progress in art, not by a line, as the course of a river, but by what he thought more properly suited to our *locus standi* on a sphere, viz., by a coil, intersected by lines radiating from a common centre, which he described as lines of emigration. The coil approximated to the lines of latitude, and the radii to those of longitude, on an ordinary globe; the pole of his sphere for this purpose being somewhat east of Palestine, a spot he selected as the original hive or centre of intelligence. He adopted this method as a means of accounting for the similarity of early art, in the most widely-separated localities, and it enabled him, without inconsecutiveness, to refer to remote places for comparison. Starting with the first known human production, the stone celt, he proceeded to show that it soon gave evidence, by its symmetry and finish, of a desire to excel; and the desire to excel was proof of an ethical condition in the producers. Taking next the earliest scratchings on bone and stone, which portrayed deer and other animals, he reasoned that in these were the fundamental points on which subsequently grew, through hieroglyphic writing, our present pictorial representations, and even our literature; while the wavy and angular lines found in the same early productions (wrought, he thought, almost unconsciously by the operators, in intervals of relaxation, as they listened to the monotonous tones of the war-song or the hymn of praise), revealed the first indications of music, by the measured beat of time. Following, from these starting-points, sometimes the sluggish coil of human progress, sometimes making a rapid excursion through this or that supposed channel of emigration, he conveyed his audience through Egyptian and Trojan art, to the sublime consummation of the Grecian; all which he argued was distinctly attributable to the ethical principles pervading this or that people. Where this condition was at the highest there art flourished, where at the lowest it languished. He had to contend with the fact, however, that art absolutely died on the introduction of the purest system of ethics, viz., those of Christianity. The difficulty in this case, he pointed out, resulted not so much from any opposition to art, on the part of the Christians, as from the fact that all art then known to the world was Pagan, and inadmissible into the new religion. As an evidence it was seen that when art revived, Raffaelle, the first imaginative painter, as soon as he passed the bounds of the Christian writing, was obliged to have recourse to the heathen mythology for his ideas, though he made this subservient to Christian supremacy. A rapid glance was then taken of the ruder arts in distant lands. The earthworks of America, and its cities buried in impenetrable forest; the monster sculptures of Easter Island; and the evidence of art, however rude, in spots which must have seemed peculiarly sacred to the nature-worshipper;—all these he attributed to a strong ethical cause, arising from religious feeling, however erroneous. Under Christianity, art, since its revival, altogether differed. In its earlier appearances it was found as closely connected with religion as in any of the preceding instances, but modern art, especially in England, seemed quite free. Upon a close inspection, however, this was not found to be the case; the greater breadth of freedom in religious principle introduced a more extended, a more liberal ethic code, and this again sent out still wider ramifications for its sustenance. He maintained that the simple purity of subjects for which there was a demand in the modern fine-art schools was an evidence of a more widely diffused, but not less intense, ethical feeling than art had ever been subject to, and that the difference arose from a more pure, simple, and comprehensive knowledge of the relationship between man and his Creator, as taught by the introducer of the new system.

THE NORFOLK AND NORWICH ARCHÆOLOGICAL SOCIETY.

THE annual meeting of the members of this society was held on the 20th ult. in the Guildhall, Norwich, the Very Rev. the Dean of Norwich in the chair. Many interesting objects were placed upon the table for the inspection of the members. Some coloured drawings, descriptive of the relic chamber recently discovered in the Cathedral, were also exhibited, and a large number of panels, painted with representations of saints, found during the recent alterations at the Church of Horsham, St. Faith's.

The Rev. C. R. Manning read the annual report of the Society, and afterwards referred to what had transpired in the Norwich Town Council relative to Thomas à Becket's Chapel, of which we have already spoken, remarking that the proceedings, which showed great indifference on the part of the Corporation, ought not to be passed over without comment by a society whose object was the preservation of such remains.

What was done at the Council meeting was briefly stated by Mr. Fitch, who said that as the building was considered unsafe, the greater part of the beautiful roof was ordered to be pulled down, and the chapel to be filled up with rubbish. Some sheds were now being erected upon the spot for the storage of scavengers' brooms, &c. When the Archæological Institute was in Norwich in 1857, Becket's chapel was admired for its beauty and grandeur.

It was also stated by Mr. Gunn that half the chapel had been cleared away. Mr. Boardman, the architect, who brought the matter under his notice, gave it as his opinion that the building was so sound that it might have been built over. Canon Venables, of Lincoln, recently visited the chapel, and expressed his gratification at inspecting so interesting a relic. In fact, it was one of the remains which rendered Norwich so interesting. Acting upon the suggestion of several members of the Society, Mr. Gunn moved the following resolution:—

"The Norwich and Norfolk Archæological Society express their regret that the chapel of St. Thomas à Becket should have been demolished, especially as they have reason to believe that the demolition was unnecessary, as it has been considered a very interesting architectural relic, and has been an object of attraction on the visits of the Archæological Institute and other learned societies."

This was seconded by Mr. Fitch, and supported by the Rev. A. C. Copeman, who thought the resolution ought to have been more strongly worded, and suggested the insertion of the word "extreme" before "regret."

The suggestion was adopted by Mr. Gunn, who said the resolution needed to be strong, as the Corporation were a pachydermatous set.

The resolution was adopted, and Sir F. Boileau suggested that a copy of it should be "sent to the ruthless Goths."

Dr. Bensly gave an account of the discovery of a very ancient map of Norwich, and called it the "Sanctuary map," as it was sent up to Parliament in the reign of Henry VIII., to show, it was presumed, the bounds of the Sanctuary at Norwich. This map is said to be eighteen years earlier in date than any other.

GAS.

A LARGE and influentially-attended public meeting of the gas consumers of Kensington and the surrounding districts, convened by the West London Gas Consumers' Association, has been held in the Vestry-hall, High-street, for the purpose of considering the great increase in the price of gas now charged to the public by the Gas-light and Coke Company. Sir Charles Dilke, M.P., occupied the chair. Mr. W. Gordon, M.P., moved the following resolution:—"That in the event of no steps being taken in Parliament to remedy the evils arising from the existing Gas Acts, it is essential that the gas consumers adopt immediate measures for taking the manufacture and supply of gas into their own hands." He thought, in the first instance, a deputation should wait upon the Board of Trade, and if no satisfactory reply could be obtained from that Board, then that the association under whose auspices they were meeting that evening should at once prepare a scheme to carry out the last clause in the resolution. Mr. Curzon seconded the resolution. Mr. James Beal supported it, as did also Mr. R. Freeman, of the Metropolitan Board of Works, and it was adopted unanimously. Other resolutions were also agreed to, in accordance with the object of the meeting, and especially in relation to the formation of a great metropolitan organisation to promote a Bill in Parliament for the repeal or amendment of the existing gas legislation.

A company is in course of formation, under the title of the Patent Gas Economiser Company, for the purpose of acquiring, developing, and working an invention patented by Mr. Ludolph Seegers, whereby a combination between the ordinary coal gas and the vapour naturally given off by light petroleum oil is effected by means of a self-acting apparatus, thereby greatly increasing the illuminating power of the coal gas, and, it is stated, at the same time materially diminishing its consumption. The invention is stated to consist in the peculiar construction of an apparatus, containing cisterns partially filled with refined petroleum light oil, and it is claimed by the patentees that the coal gas, after having passed over the surface of this light oil, becomes charged with more than double the illuminating power which it previously possessed. It is also claimed that the gas thus carburetted is considerably purer, and does not give off the obnoxious vapours of ordinary coal gas. This system has been already adopted in the illumination of the Royal Polytechnic Institution, as well as in other public places, with, it appears, very satisfactory results. All the capital at present asked from the public is 5,000*l.*, in 10*l.* shares, with a view of testing the financial advantages of the system before bringing it more prominently under notice.

The Lighting Committee of the Accrington Local Board have met in the Court-room of the Peel Institution, to investigate an alleged fraud perpetrated on the Local Board by the gas company, according to the *Liverpool Journal*, which states that the clerk to the Board read copies of letters which he had addressed to Mr. W. Barratt, the gas company's manager, in which he gave particulars of the charges which the Board's lighting inspector had made against him, and which details were intended to show that the meters had been altered so as to represent 80,000 cubic feet of gas which had never gone through the public lamps. The clerk had received a letter from Mr. G. W. Barlow, solicitor, announcing that the gas company will take proceedings "with respect to the serious and unfounded charges made against the company and its manager." Mr. John Boothman, who had made the charge, said he was prepared to prove the charges again, and not only them, but many more. The chairman said he thought the committee should refer the report to the Board, and let them deal with it as they thought proper, which the committee agreed to.

NEW ENGLISH CHURCH AT PATRAS, NEAR CORINTH.

THE English Church of St. Andrew, Patras, near Corinth, Greece, has been dedicated by the Bishop of Gibraltar. The foundation-stone had been laid in February, 1872, in the presence of the Greek Archbishop of Patras, who died before the completion of the church. The edifice, consisting of nave and chancel, was built from the designs of Mr. G. Viallo by Greek workmen, under the direction of the chaplain and Mr. W. Morphy, of Patras. The walls are of a hard black stone from a neighbouring mountain, roughly shaped and pointed, with white freestone dressings. The roof is covered with red tiles from Marseilles. The glass windows, the seats, and indeed nearly all the furniture of the church, together with the framework of the roof, were brought from England. The site, which is sufficiently large to admit of a chaplain's house being some day added, was the gift of the Greek Government. The total cost, including the raising and levelling the ground and surrounding the whole with a wall, was somewhat under 2,000*l*. The church is intended for the use of the British residents engaged in business at Patras, and also for sailors from English vessels in the currant trade, of which Patras is the principal seat.

PUBLIC MUSEUMS AND GALLERIES.

A MEETING on this subject, to which the mayors of corporations, chairmen of art and science schools, and others interested in museums and art galleries were invited, has been held in the rooms of the Society of Arts for the purpose "of appointing a deputation to the Prime Minister to urge upon the Government the importance of bringing all the national museums and galleries under the authority of a Minister of the Crown, with direct responsibility to Parliament." Lord Hampton presided, and there were also present the mayor of Birmingham, Mr. Mundella, M.P., Mr. Rathbone, M.P., and representatives from Nottingham, Leeds, and several other English and Scotch towns.

The Chairman read a letter from the Prime Minister, stating that at present it was impossible for him to name a day to receive a deputation. The primary object for which they had met, therefore, could not be carried out; but that need not preclude the discussion of the subject.

The Mayor of Birmingham then moved:—

"That, in the opinion of this meeting, all museums and galleries supported or subsidised by Parliament should be made conducive to the advancement of education and technical instruction to the fullest possible extent, and that special parliamentary funds should be granted to assist local and provincial museums in the acquisition and loan of objects, and with building grants, and thus extend their usefulness."

Mr. Rathbone, of Liverpool, seconded the resolution, which was supported by Mr. Mundella, M.P., and Dr. Campbell, and unanimously adopted.

It was further resolved,—

"That, in the opinion of the meeting, all national museums and galleries should be placed under the authority of a Minister of the Crown, with direct responsibility to Parliament; thereby rendering unnecessary for the purposes of executive administration all unpaid and irresponsible trustees, except those who are trustees under bequests or deeds, who might continue to have the full powers of their trust, but should not be charged with the expenditure of money voted by Parliament."

It was also resolved that the chairman be requested to submit to the Prime Minister the foregoing resolutions, and press their importance on his attention.

THE NEW HEATING APPARATUS.

A NUMBER of influential gentlemen, at the invitation of Messrs. Trench & Murray, of Trafalgar-square, visited Hatfield, the seat of the Marquis of Salisbury, recently, to inspect the new system, to which we have already alluded, of heating hothouses, vineries, and large ranges of buildings generally, free of expense. The invention has been patented by Mr. J. Cowan, gardener. The system consists of the combination of a limekiln with a hot-water apparatus; the kiln is filled with limestone or chalk and coal, and lighted, and the heat thus generated is utilised for the heating of a boiler placed at the top of the kiln, from which supply-pipes flow to the various houses. Mr. Cowan claims for his system that all expenses are paid by the lime made, that the entire cost of fuel for hot-water apparatus, one of the most important items in the cost of greenhouses, is thus saved; that the work is done with more regularity than by the ordinary system, as the kiln does not require charging more than once a day; that it requires no night attendance; that a greater regularity of temperature may be obtained; and that, as there is no smoke from the kiln, the disfigurement on the old system is entirely got rid of. It was stated at Glasgow, where the system has been tried for some time, that the lime was sold at a profit of 4*s*. per ton, all the heating being obtained for nothing. Mr. Bennett, the gardener at Hatfield, speaks highly of the plan, and states that he heats twenty-one houses by it at less cost than nine are heated in another part of the grounds in the old manner. He considers it a decided success. The general opinion expressed was entirely in favour of the new method. A company, it is said, will probably be formed for purchasing and working the patent.

COMPTON WYNYATE.

SIR,—The town and vicinity of Banbury, now accessible by railway, are specially interesting to archæologists and antiquaries, who when in this town, which contains ancient specimens of architecture (see A. Beesley's "History of Banbury," 1841), are within a short distance of Rolbrich Stones, the Camps of Madmarston, Tadmarton, Ilbury, and Gredenton; the Roman pavements at Great Tew, Beaconsfield Farm, and Wigginton; the fine tall steeple of Bloxham; the Churches of Swalcliffe and Broughton; the noble old abbey at Wroxton; the remains of Hanwell Castle; the beautiful monument in Great Tew Church, where Lord Falkland was buried, and the ancestral Castle of Broughton; the sites of the famous fights of Edge-hill and Cropredy, also the interesting old house of Compton Wynyate, one of the strongholds of the Parliament during the civil war, which has been renovated recently. In Nash's "Mansions of England" are two engravings of this mansion, which is described at length in vol. i. of Howitt's "Visits to Remarkable Places." It is also engraved and described in the *Saturday Magazine*, for the year 1842, pp. 178–191, as an interesting specimen of domestic architecture, which is certainly the fact. The bay-window of the hall is described as being "of grand proportion and of a fine and pure design," the interior retaining "the style and features of the feudal age." All the old furniture and ornaments of the house were sold many years since. The ceilings show the interior appearance of this house in the olden time, and the armorial insignia denote the loyalty of the former occupants. This edifice was erected by Sir William Compton, the friend of King Henry VIII., who died in the twentieth year of that reign. This king granted a large amount of land to this person, and permitted him to destroy Fulbrook Castle. It is stated that the chimneys now at Compton Wynyate were removed upon scaffolds from Fulbrook, and that the former house was constructed principally of the Fulbrook bricks, &c. In it are the remains of two chapels, or shrines,—one on the ground-floor, and the other in the roof, for secret worship, apparently. The grandson of Sir William married an heiress, by whom he had a son, the Earl of Northampton, a Loyalist, killed at the battle of Hopton Heath. When the rebels seized Compton Wynyate they destroyed the costly chapel window erected by Sir William Compton, being, according to Dugdale, of "very curious workmanship," also the monumental sculptures and adjacent church. This curious old secluded mansion remains for the admiration of posterity. Its appearance from the north reminded Mr. Howitt of the stanza in the "Hermit of Warkworth," viz.:—

"Behind yon hill, so steep and high,
Down in the lowly glen,
There stands a castle fair and strong,
Far from the abode of men."

CHR. COOKE.

MANUFACTURE OF FIRE-CLAY GOODS.

SIR,—The writer of the recent article on this subject in your paper might have mentioned, amongst the "noted seams," Buckley Mountain, Flintshire, where the fire-clay has been worked for a great many years, over thirty yards thick in open face. Its analysis is quite as good, if not better, than that given in the article, and its brand is known throughout the world. The clay is not under the coal measures, but cuts them out like a fault, and is really a fire-stone, being as hard as most stone. J. M. GILSON.

MONUMENTAL.

Cockermouth.—Arrangements are being made for the erection of a statue of the Earl of Mayo in this town, at the end of Station-street.

Monument of the Duke of Brunswick at Geneva.—The *Graphic* says the design for the late Duke of Brunswick's monument to be erected by the City of Geneva has been decided on. It will consist of a red granite base, upon which will be ranged six bronze statues of the late duke's relatives, half as large as life, and relieved by six lions. The statues will be surmounted by a canopy supported by columns of Carrara marble, and the whole will be crowned by an equestrian statue of the late duke.

The Hans Sachs Monument at Nuremberg.—On June 24th, nearly 300 years after the death of this master-singer, who played an important part also in the Reformation movement, the statue of Hans Sachs will be unveiled at Nuremberg. Luther and Melancthon looked upon him as one of their fellow-workers. After the Thirty Years' War he was forgotten. Goethe, Wieland, and Friedrich von Schlegel exerted themselves to restore his fame; but only now his proper place and value in German literature begins to be more universally understood. A course of three lectures has been given on behalf of the fund by M. Karl Blind, viz., on May 22nd, 29th, and June 5th, at the Cavendish Rooms, Mortimer-street, under the title of "Hans Sachs and the Master-singer Period, with reference to the Poetry of the German Troubadours."

Baron de Triqueti, the Sculptor.—The Paris correspondent of the *Times* says:—"The artistic world and many friends in England will learn with regret the death of Baron de Triqueti, the distinguished sculptor. In him the world has lost a true artist, whose whole soul was given to his pursuit. Had he been of a less modest and retiring disposition, he would have been more conspicuous before the public, but he never sought applause. Like the artists of the Renaissance, his genius was many-sided; he was distinguished as a writer, and his charming addresses or lectures to the Paris Protestant apprentices will remain as perfect models of their kind. As an artist, his principal works are the bronze doors of the church of the Madeleine; the two crucifixes of the Invalides—one in bronze, the other in marble; the tomb of the Duke of Orleans at the St. Ferdinand Chapel; and his beautiful Memorial Chapel at Windsor. He was an exquisite draughtsman, and is understood to have left a large and precious collection of compositions and drawings, as well as many valuable sketches of places and scenery he had visited. The Queen heard with much regret of the death of Baron Triqueti, whose great work of the marbles and the recumbent statue of the Prince Consort in the Wolsey (now Albert) Chapel at Windsor is on the eve of completion, and which, unfortunately, he has not been spared to witness."

SCHOOL BOARD SCHOOLS.

Llantarnam.—The new schools of St. Dials, at Cwmbran, Monmouthshire, built for the Llantarnam School Board on half an acre of land alongside the canal, and close by the railway-station, were formally opened with a treat to the scholars, and a public meeting. The schools had been built to supply the rapidly-growing wants of the populous district of Lower Cwmbran. The design of the building is in the Gothic style of architecture of the thirteenth century, and although generally of a plain character, there are some quaint bits of detail introduced which produce a picturesque effect. The schools are divided into boys', girls', and infants' schools, with large well-lighted class-rooms to each. A master's house faces the public road to Cwmbran, and has the advantage of overlooking nearly the whole of the school premises. The plan of the school comprises accommodation for 406 children, allowing the maximum in each department required by the Committee of Council on Education, and costs 2,540*l*., or a fraction over 6*l*. per head. Separate hat and cloak lobbies are provided to each school, near which are well-fitted lavatories. The material used in the walls is stone from Tyny Cmw and Abergavenny, with Bath-stone dressings. The whole of the inside woodwork is stained and varnished; the walls and ceilings are plastered and whitened; and the roofs are covered with Bangor slates, with ornamental ridge-and-furrow tile-crease. A bell-cot is placed over the boys' school, and contains a bell of nearly 80 lb. weight. The work has

been carried out by Mr. Henry Parfitt, builder, Pontnewydd, from designs and under the supervision of Mr. E. A. Lansdowne, architect, Newport.

Willaston.—Mr. Bower, architect, has been requested to prepare a plan of the proposed site for a new school. Mr. Bower also prepared a preliminary sketch block plan of a school which would accommodate rather over 300 children as required by the Education Department. The frontage of the plot was 80 yards by 48 yards. The elevation showed a Gothic design, and at either end space was left for the building of houses for mistress and master, it being left to the Board to decide whether they would have one or both houses, as they might be required for married or single people. The frontage of the school itself would be 148 ft., and that of one house would be 28 ft. Mr. Bower, in answer to a question by the Chairman, at a meeting of the Board, said his charge would be the usual charge of 5 per cent. on the cost of the building; but he would include plans, attendances, in fact everything. That would be less than the usual terms, these things being usually charged extra. If he supplied the quantities, his charge would be 1½ per cent. for that. Mr. James Wood thought that 5 per cent. was the usual charge, and as Mr. Bower had deducted a number of extras which made his charges rather under than over the usual architects' charges, he moved that Mr. Bower be appointed their architect. This was carried.

Edinburgh.—The Edinburgh School Board have resolved to borrow 70,000*l.* from the Public Works Loan Commissioners for the erection of seven new schools, and awarded the four premiums formerly offered for plans to Messrs. Anderson, Moffatt, Beattie, and Wilson.

OPENING OF PADDINGTON BATHS AND WASHHOUSES.

THE new public baths and washhouses in Queen's-road, Paddington, have been formally opened by the Lord Mayor, in state, the borough members, chairman of the Metropolitan Board of Works, and other dignitaries. We gave a view and plan, with full particulars, on the 31st of January last (pp. 90-93). The site covers an acre of ground, and occupies an area lying between Queen's-road and Douglas-place, and is in full view of the thousands who pass along the Bishop's-road to the West End, Regent-street, or Westbourne-grove. The building is in the Italian style of architecture, the material used being white Suffolk bricks, with Portland-stone dressings. It has a frontage of 160 ft., with a maximum depth of 250 ft.

Entering the baths from the front entrance and passing through the ticket-office, the men's first-class swimming-bath is reached. It is the largest and most important of the various departments into which the establishment is divided. It is 100 ft. long by 54 ft. wide, with water-line of 90 ft. by 40 ft. The bath when filled will hold 100,000 gallons of water. On the north and south sides of the bath are the boxes for the use of bathers; at the east end is a spring board, and at the other extremity an ornamental fountain. Around the platform of the bath, and at the western end of the room, is laid some blue-figured tiling, manufactured expressly for this bath. For the protection of bathers, a life-line runs all round the bath. This bath-room is illuminated from the roof by 128 gas jets.

The men's second and third class swimming baths are at the rear of the first-class bath, end to end, and are each 70 ft. long by 30 ft. wide, provided with forty boxes for bathers. The ladies' swimming-bath is 45 ft. long by 35 ft. wide, and is fitted up with twelve extra large dressing-boxes. Each of these swimming-baths is lighted from the roof. The private baths are in square compartments, the first-class being 7 ft. long by 6 ft. wide, with enamelled partitions and porcelain baths; the second-class, 6 ft. square, with copper japanned baths.

The laundry department is 75 ft. long by 45 ft. wide, subdivided into groups of compartments, so as to accommodate fifty washers. Immediately adjoining are the ironing-rooms and house laundry. Attached to the washhouse are several patent centrifugal wringing-machines, also mangles, all of which are worked by steam machinery, in addition to which are a number of drying-closets.

The first-floor of the building is set apart as a residence for the superintendents, and for Commissioners' offices. At the rear of the building is a residence for the engineer, Mr. Wrapson; whilst a space is left for the erection of a Turkish bath or gymnasium at any future period.

Mr. Lewis H. Isaacs was the architect, and Mr. T. Elkington the builder, represented by Mr. George Rayment. The engineering work was done by Messrs. J. & F. May, and the gas engineering by Mr. J. H. Humfress. Mr. James Abbott was clerk of the works.

HOUSES FOR THE POOREST.

DR. LANKESTER has held an inquest at the King's Arms Tavern, Rawston-street, Clerkenwell, on the body of Joseph C. Lane, aged nine weeks. The evidence showed that the father was a carman, earning a guinea a week, and living with his wife and five children in one room, with a less space than 700 cubic feet, at No. 28, Thomas-street, for which he paid 3*s.* a week rent. The deceased expired from suffocation, from want of fresh air, in bed, being the second child the parents had lost from a similar cause. The coroner remarked that it was high time that the urgent claims of the poor for dwelling accommodation were attended to. The model lodging-houses which have been and are being built do not touch persons earning a pound or less per week. Every day the humbler dwellings in London were being pulled down, and no steps taken for providing accommodation in their places; so consequently things got worse daily; and unless the Government took some steps in the matter, the results would tell with disastrous effects upon the future of this great country; for, in consequence of the overcrowding, the next generation of the humble classes would be puny, sickly, and degenerated, a burden on the middle and upper classes, besides which the source of supply for our army and navy would be completely destroyed; also the intermingling of the sexes was productive of immorality. A juror remarked that in some of the blocks of lodging-houses now being built no person earning less than 2*l.* a week had a chance of obtaining accommodation, the rent in many cases being 6*s.* and 7*s.* a week. The Peabody fund, which everybody thought was for the erection and improvement of cheap dwellings for artizans and labourers, was being turned by the representatives of the trustees into a profitable investment, as witness the purchase and disposal of a large plot of land at Brixton. He hoped that, through the medium of this inquiry, the attention of Lord Derby, or other of the trustees of the fund, would be called to the manner in which the noble gifts of the large-hearted American were being dealt with. The coroner remarked that besides the above evil, the expense on the ratepayers and friends was considerable, for he knew that 3,000 such cases occurred in England every year. The jury returned a verdict of accidental death, and the matter was ordered by the coroner to be entered in the complaint-book at the vestry-hall, so that the vestry might have the matter brought before them.

DECORATION.

WHEN a king, a queen, or an emperor is to pay a visit to Windsor Castle, the Guildhall, Burleigh House, or to any fine old building, we read that the place is to be "decorated" for the occasion by some West End upholsterer at an enormous expense, which means that all that is good is to be turned out or covered up with detestable muslin and hangings of "gorgeous description": this is, and has been, but I hope will not always continue. It is just the same in a small way when a lady gives a ball: away go all her nice bits of old furniture, china, glass, and objects of "bijoutry and virtu," doors come down and carpets come up; nothing remains but white muslin, pink ribbons, and flowers stuffed into fireplaces and everywhere, where they get knocked to pieces and could not possibly grow.

Fancy, if her Majesty wished to go to the Kensington Museum or to the British, and the authorities were to remove the cases and let her see nothing but drapery and flowers, she would get a very lively remembrance of the interesting objects which other people see, but it would be no worse than the bad taste displayed in "decorating" other places where she goes. Why cannot people let our fine buildings appear to the great ones as they really are? Why should not an emperor see the Guildhall as it is every day? Why have suites of rooms to have everything good in them removed to make place for a lot of rubbish which is seen everywhere else? I cannot see it; but much better it would be if kings and queens could see places as you and I do. Let some one set an example by *doing nothing*, or if H.R.H. reads this he may refuse to go somewhere unless the good folks leave it alone: he would see a deal more, and save some one a lot of money. I passed Holyrood yesterday: it looked a deal better to me than it would to the Prince if he said he wanted to see it, for they would cover it all up so that he should not. This may do good if you care to print it.

G. T.

OLD LONDON AS VISIBLE IN MAPS.

HAVING compared the map of London shown in "Civitates Orbis Terrarum," printed at Cologne in 1572, preserved in the library at the British Museum, with my fac-simile of "Civitas Londinum," I have no doubt that it is, to a considerable extent, a reduced copy of Agas's survey. There are, however, many dissimilarities between the two,—the size of Agas's map is 6 ft. by 2 ft. 4 in.; the dimensions of the map in "Civitates Orbis Terrarum" are 13 in. by 19 in.; the spelling of the names of streets varies in many cases; and the engraving of Agas is often "improved" by his copyist, who has introduced at the bottom of the map four figures, ladies and gentlemen, dressed in the costume of the period. A further comparison would, I have no doubt, show many other discrepancies.

EDWARD J. FRANCIS.

SPONTANEOUS COMBUSTION FROM THE USE OF OILS.

AT the present time the fire offices pay no regard to the description of oil used for lubricating purposes, nor for any purpose whatever, except in the making-up of woollen fabrics. In that case there is a classification of oils, so as to provide for a varying rate of insurance, according to the description of oil used. According to Messrs. C. Price & Co. the classification adopted is erroneous, and instead of diminishing the risk of spontaneous combustion, actually tends to increase it. A letter addressed by this firm to the committee of Northern Fire Offices shows the peril of this state of things, and seems entitled to the attention of the offices. The fact that the rate of insurance in regard to cotton-mills has gone up as much as 100 to 150 per cent. within the last few years, affords some indication of the extent to which fires of a certain kind are found to increase.

The writers say:—

"Considering the imminent danger shown by experiment as arising from the contact of certain oils with cotton waste, it seems remarkable that the Fire Offices pay no regard to the quality of the oil used for lubricating purposes. Oils capable of setting up spontaneous combustion when mixed with textile fabrics, waste materials, sawdust, &c., would seem to be very objectionable as lubricants, despite every care to effect the speedy removal of waste. The superior safety of an oil which, under no circumstances, can set up spontaneous combustion, is undeniable, and would seem to call for distinct recognition on the part of the Fire Offices, whose interest it is to encourage the use of a lubricant which is perfectly safe. On the other hand, where the oil used for lubricating purposes is known to possess dangerous properties, it is but right and politic that the rate of insurance should be proportioned to the obvious risk thereby incurred."

THE TRADES MOVEMENT.

London.—A crowded meeting of builders' labourers has been held to consider the advisability of asking for an increase of wages to 6*d.* per hour, as requested in the memorial addressed to the Builders' Association in 1872, and to which no reply has been received. Detachments of labourers from the different districts marched to the hall in Bouverie-street with bands and banners, and, after considerable discussion, a resolution was submitted, to the effect that in the opinion of the meeting the small addition to wages given in 1872 by the sub-committee of the Masters' Association was insufficient, looking to the great increase in the prices of clothing, provisions, &c., and that they felt confident the public would endorse their statement that 6*d.* per hour was not too much to enable a man to feed, clothe, and educate himself and his family. The resolution was adopted unanimously, and a copy was directed to be sent to the Builders' Association, the meeting being adjourned to

June 13, when it is hoped the masters' reply will be ready for consideration.

Preston.—The six months' notice of the journeymen joiners and carpenters, demanding an increase of wages from 28s. to 32s. per week, having expired, there has been a general meeting of the employers, when a resolution agreed to at a previous meeting to give an advance of 2s. per week now, and to withdraw a previous offer of 2s. more next year, or to submit the matter to arbitration, was re-affirmed. At a full meeting of the workmen, it has been unanimously resolved to reject the whole of the masters' propositions, and to insist on an immediate advance of 4s. per week; and at the end of the joiners' week, nearly 400 men were to strike work, including those employed at mills and other places. We are informed that the Executive Committee of the Joiners' and Carpenters' Association have not sanctioned this strike, and that it has been entered into in the face of their refusal. The Preston men will therefore be thrown upon their own funds, and upon such aid as the Preston Trades' Council may be disposed to give them. Three of the employers, having urgent work in hand, have expressed their intention of conceding the demand of the men rather than encounter the inconveniences of a strike. On the other hand, the masters generally say that the present state of trade does not justify them in giving any advance, but they would concede 2s. to prevent a strike and its concomitant ill-feeling.

Darlington.—A meeting of the master builders was held on the 29th of April last to consider a demand made by the bricklayers for an advance of wages of 3s. per week, and to cease work on Saturdays at twelve instead of one o'clock, when it was resolved to grant the 3s. advance providing the men would agree to work until 12·30 on Saturdays, and extend their starting-places for walking time. A further meeting was held on the 28th, when a reply was read from the bricklayers, "that we still hold to the notice sent, and require from you three months' notice at the proper time before any alteration of our rules be made." A deputation of the masters then waited upon the men to give reasons why the starting-places should be extended, but still they refused to come to terms. It was then offered to give the 3s. advance and allow the walking stations to remain unaltered for two months; also that the hour to cease work on Saturdays be 12·30. To which the men replied, "We will not deviate from our notice one iota." The masters have now withdrawn their offer, as they are of opinion that they have endeavoured to meet the men on fair and reasonable grounds, and only object to the half-hour on Saturdays, and the places from which the men start to walk on account of the irregularity and inconvenience of two sets of men commencing and ceasing work at two different times. A demand has also been made by the plasterers for an advance of 3s. per week, which the masters have declined to grant, because they consider the present wage of 33s. per week sufficient.

RAILWAY MATTERS.

Falling-in of a Cutting at Bankhall.—An accident of a serious character, but fortunately unattended with any fatal results, occurred at the Bankhall cutting, on the Bootle branch line of the London and North-Western Railway. The cutting, which is between 60 and 70 yards long and 85 ft. deep, passes close by the goods yard of the Lancashire and Yorkshire Company, and on the opposite side was a large brick-kiln, adjoining a wall which protected the top of the cutting. Symptoms of cracking had been observed in the ground near the kiln, and the whole length of the ground gave way and fell into the cutting, carrying with it the greater portion of the kiln of burning bricks, and completely blocking up the line; and but for the promptitude of a platelayer named Samuel Brown, the most disastrous consequences might have ensued.

Lincoln.—Progress is being made in alterations and improvements at the G.N.R. Station in this city. Owing to the rapid development of trade, and the great increase of population in Lincoln, business in all departments at this station must of late have been conducted under great difficulties, whilst the accommodation for the public has been totally inadequate to its requirements. The platform on the northern side of the station will now be made of uniform width, the booking-office enlarged by the addition of the present refreshment-room; a new refreshment-room will be built where the north-east tower now stands, new ladies' waiting-room, new parcels office, and a variety of other alterations and improvements. Messrs. Parnell & Sons, of Rugby, are the contractors. In addition to the water-tank, recently erected on the Holmes, and the extensive alterations in the same locality, a building, capable of holding a large number of locomotives is to be erected there, and it is highly probable that the whole of the "goods" department will before long be transferred to the Holmes also.

AS TO A NEW STYLE.

SIR,—Your correspondent, "E. L. T.," denominates my doubts as to the possibility of a new style "carping croakings," and "persecutions." If "E. L. T." will only communicate to the *Builder* the "first requirements or conceptions of" the new style, I promise neither to *croak*, nor *laugh*, nor *persecute*. Some of the things mentioned by "E. L. T." were tangible discoveries, such as gunpowder and the steam-engine. The early printers had definite objects, and the early telegraphists had the phenomena of electricity to go upon. The men who busied themselves about these things knew very well what they were driving at; but the men of the new style can tell us nothing about it, nor the principles on which it is to be based. It is an airy nothing, named before it has a local habitation. The architects have had, for a great many years, all the elements of architecture, which are now, were, and ever will be, the same; yet they and the spirit of the age together have been unable to get up a new style, but doggedly adhere to the old ones. It is, at least, consoling to the writer to learn that the profession numbers its "carping croakers," doubters, and "persecutors." Give us an inkling of in what this new style is to consist. Let us have evidence. If "E. L. T." cannot tell us something about the new style, we must conclude that he knows nothing about it; and in this case I will leave it to others to decide whether his belief in a new style is a reasonable belief. There is no one who would hail a new style of architecture more joyously than myself; but "E. L. T." must pardon me if I am not enthusiastic about it till the profound and gifted architects of the present age give it a local habitation as well as a name. W. C. T.

CASES UNDER METROPOLITAN BUILDING ACT.

WOODEN ADDITIONS.

THE District Surveyor of Hammersmith took out a summons at the Hammersmith Police-court against Mr. Matthews for having made certain additions to cow-sheds in Wells-mews without giving notice. His defence was that he was not the proper party to be summoned, having been employed by a Mr. Price, of Oxendon-street, who found materials and advanced money to pay wages.

The magistrate, Mr. Ingham, adjourned the summons for defendant to bring Mr. Price as his witness, but at the adjourned hearing it transpired that he refused to attend. A warrant was then granted, and subsequently Mr. Price, against whom it was granted, attended, and gave evidence which identified him as the master builder.

The District Surveyor then proceeded to state that the additions to the before-mentioned sheds were of wood, secured to posts driven in the ground, and attached to the old walls. The present summons was for not giving notice, after which he intended to proceed for irregularity.

The magistrate said that although it was very difficult to draw the line in these cases, still he thought that in the case before him there need be no doubt, Mr. Price having erected certain additions in such a manner as to be clearly in contravention of the Building Act, which provided that buildings should be enclosed with incombustible materials. He must, therefore, inflict a penalty sufficient to cover witness's expenses, viz., 10s., and costs, 4s., allowing Mr. Price one month to make the alterations required.

COTTENHAM SCHOOL-BOARD, CAMBRIDGE.

SIR,—The drawings for these new schools are prepared by a local builder, who tendered at an open competition, and his tender (1,200*l.*) is accepted. Should not the Government Board look into this matter? Q.

THE ILLUSTRATION OF SCOTTISH ARCHITECTURE.

IN the evening of the day on which the first stone of the new cathedral was laid in Edinburgh, a *conversazione* was held in the Museum of Science and Art, at which Sir G. G. Scott delivered a lecture on the "Architecture of Scotland." The lecture was rather too technical for a general audience, and was cut short. Next day Sir Gilbert sent a letter to the *Scotsman*, in which he stated that he meant to have called attention to the circumstance that no minute delineation of the architecture of Scotland had been published, the work of Mr. Billings being pictorial, and not containing measured drawings and details; he therefore recommended that Mr. Anderson (than whom no one was better qualified), who had already some measured drawings, should be encouraged to complete the work, and that material aid should be supplied to him to enable him to publish it.

PHOTOGRAPHS FROM THE ARCHITECTURAL MUSEUM.

MR. BEDFORD LEMERE, of the Strand, has carried out an excellent work—that of photographing exhaustively the collection of casts in the Royal Architectural Museum, Westminster. He therefore deserves well of the profession, and it is to be hoped that his undertaking will meet corresponding support. It should serve to make more widely known the contents of the building. By means of these photographs, with the catalogue of the Museum and one or two descriptive papers by members of the profession, purchasers will be able to make better use of the treasures of the collection than has hitherto been possible. The series consists of sixty photographs, of which thirty plates are foreign and thirty English examples of sculpture and ornament, forming a sort of illustrated appendix to the catalogue. We must add that the terms upon which these photographs are offered to the public, with a reduction to members of the Museum, are liberal, and we trust that this spirited enterprise will not languish for want of adequate support.

THE WIMBLEDON SEWAGE.

WIMBLEDON has made several attempts to provide a sewage scheme to comply with the requisitions of the Thames Conservators to cut off the sewage of the town from discharging itself into streams connected with the Thames. Some time since, after repeated failures of propositions, the surveyor of Wimbledon (Mr. Rowell) proposed a scheme for dealing with the sewage by deodorisation and intermittent downward filtration, which it was supposed would cost about 40,000*l.* An inspector was sent down by the Local Government Board, and held an inquiry. His report, however, was against a portion of the scheme, and he recommended one outfall only; a western and an eastern outfall had been proposed. It was also proposed that the outfall should be removed further up the river Wandle. The Local Government Board of the parish accordingly amended their scheme, the process being essentially the same. A further inquiry was held in Wimbledon, and the inspector of the Local Government Board reported in favour of the scheme as altered. Contracts have been advertised for, for the erection of the necessary works, and one will be chosen at a Board meeting to be held in Wimbledon.

SCHOOL BUILDING NEWS.

Nottingham.—The foundation of the new Roman Catholic schools of St. Patrick's, London-road, Nottingham, has been laid. The ground has been purchased from the Corporation for 2,476*l.*, and it is intended to erect on the site a new church, a presbytery, and schools. Arrangements have not yet been made to undertake the erection of the first two buildings. The erection of the building will be under the superintendence of Messrs. Evans & Jolly, architects; it will contain three stories; a school-room will be on each floor, of 53 ft. by 22 ft.; and the cost is estimated at 1,700*l.*

Southampton.—The Kell Memorial (Unitarian) Schools have been opened. The building has been erected on a a plot of land having a frontage to Bellevue-road, and is situated at the eastern end of the Church of the Saviour. The exterior is executed in Swanage rubble-stone, with Bath-stone dressings specially designed to harmonise with the church adjoining. Internally there is a school-room 35 ft. 6 in. by 25 ft. 6 in., with an open timbered, stained roof, supported on laminated arched principals, having an organ recess on the west side, and an appropriate raised platform, approached by two steps at the southern end. There are also two class-rooms communicating with the school-room, each 16 ft. by 13 ft. respectively, for boys and girls, with recess for library, and conveniently-arranged cloak-rooms and offices. The girls' entrance is in Bellevue-road, by a porch near the north entrance to the church, over which is carved on a ribbon the words "Memorial Schools, 1874." The boys' entrance is from the private road on the east side, into a lobby paved with tesselated tiles. A covered communication, giving easy access, has been formed between the new schools and the vestry of the church. The several rooms are well ventilated; the class-rooms are heated by open fireplaces, and the school-room by hot-water pipes, in addition to an open fire-

place. The whole is well lighted with gas. The schools were erected by the Rev. Edmund Kell, in accordance with the wish of his deceased wife. The work has been executed by Mr. James Dyer, builder, from the designs and under the personal superintendence of Mr. W. H. Mitchell, architect, Southampton.

Hackney.—The opening of St. Michael's new schools, Hackney, has taken place. The cost of the building was about 3,500*l.*, and a sum of 400*l.* remains to be cleared off before the necessary certificate can be obtained for the official opening. The schools will accommodate 250 boys and 250 girls on a single floor.

Hambleton.—A new school has been opened here. The plans were prepared by Mr. W. J. Hopkins, of Worcester, architect, and the work was commenced in June, 1873, and completed shortly before Christmas. The building was originally intended to supply accommodation for eighty-three children, but as many of the parents live nearer to the parish school at Oddingley, fifteen children are sent to this school, and the number was, consequently, reduced to sixty-eight. At Christmas, shortly after the completion, the schools were opened. The school will be supported by a voluntary rate, unanimously agreed upon, and the rate for the present year was fixed at 3d. in the pound. A Sunday school has been commenced, and it is intended to establish a lending library in connexion with the school. The cost of the building has been defrayed almost wholly by voluntary subscriptions. The total cost of the building and fittings will be 680*l.*

ROMAN CATHOLIC CHURCH BUILDING NEWS.

Kensington.—A new altar, dedicated to the Virgin, has just been erected by Messrs. Farmer & Brindley, in the Carmelite church at Vicarage-place, Kensington. The work is executed in Caen stone, alabaster, marble, and spars, at a cost of 400*l.*, from the designs of Mr. E. Welby Pugin.

Whitechapel.—The church of St. Boniface (German R. C. church), which fell to the ground some two years back, is about to be rebuilt, from the designs of Mr. E. Welby Pugin. The building will be in the German Gothic style, and capable of holding 700 persons.

Great Prescott-street, Tower-hill.—A new permanent church is to be commenced at once in place of the temporary iron church, which was erected in this locality some ten years ago. The new building is to be in the Decorated period of Gothic architecture, and will contain a double triforium, and the whole will be groined and supported on marble columns. The building is arranged to hold about 1,200 people. A lantern, 130 ft. high, will be placed at the junction between the transept and the nave, and opening into the same, on the same plan as that of St. Lawrence's, at Rouen. Mr. E. Welby Pugin is the architect.

Kingston-on-Thames.—St. Raphael's Church has lately undergone an extensive restoration,—the gift of Mr. E. Raphael, of Thames Ditton. The whole of the old seating has been replaced by new wainscot oak seats, of elaborate design. A carved oak confessional has also been added in place of the old one. At the east end of the south aisle a carved altar, tabernacle, and reredos of statuary marble has been erected,—the tabernacle having an engraved and illuminated brass door. A heating-chamber has been built, and the church warmed by hot-water pipes, enclosed in bronzed coil cases, with white marble tops. Messrs. Cox & Sons, of London, have been the contractors for the works; Mr. W. W. Phipson, C.E., being the engineer of the warming arrangements. The floor has been tiled. The church has been lighted by six polished brass coronas, suspended from the centres of the arches dividing the nave from the aisles, and by brackets to match, all of which have been executed by Messrs. Hart, Son, & Peard, of London. Messrs. Meyer & Co., also of London, have supplied the statues, the draperies of which are gilt and engraved, and also the "stations of the cross," which have been painted by an artist in Munich. The works have been carried out from the designs of Mr. C. G. Wray, of London.

The Grocers' Company.—Designs have been received by the Company in competition for a middle-class day-school.

STAINED GLASS.

St. Barnabas Church, Leeds.—Two of the windows in the north aisle of this church have been filled with painted glass, from the studio of Powell Brothers, of Leeds. The subjects are the Crucifixion, Descent from the Cross, Pentecost, and St. John taking the Virgin to his home.

Christ Church, Freemantle, Southampton.—The east chancel window of this church has just been filled with stained and painted glass, the gift of Mr. J. P. Ranwell, of London. The window is composed of five lights, with tracery lights in the Decorated style of architecture. In the centre lower opening is represented the figure of Our Saviour, with the Orb. Immediately under is a group representing the raising of Lazarus, and text, "Whosoever liveth and believeth in me shall never die." On the right of Our Lord, St. Peter is shown holding the keys; the group below is our Lord and St. Peter, "Feed my sheep." On the left of Our Saviour is St. Paul, resting on the sword; the group under represents his preaching at Athens. The next figure to St. Paul is St. John the Evangelist, with pen and Gospel, under which is St. John writing the Revelations. The other figure is the Evangelist St. Matthew, with pen and Gospel. The group below is Our Lord calling him from the Receipt of Custom, to follow Him. In the centre tracery light, which is large, the subject is the Ascension. The surrounding tracery lights are fitted with Mosaic ornamental glass. The design thus represents the New Testament dispensation. Messrs. Baillie & Mayer, of London, were the artists. There are several other memorial windows in the church, all of which have been from time to time supplied by this firm.

Whichford Church, Shipston-on-Stour.—Messrs. Holland, Holt, & Holland, of Warwick, have recently placed a stained glass window at the western end of this church. In the centre light is a figure of our Saviour, as the Good Shepherd; in the side lights are representations of the parable of the Sower and Reaper. The window is in memory of the late Mr. Wincott, of Whichford.

Kilsby Church.—This church has lately undergone additional embellishment, through the introduction of a single-light stained-glass window, containing a painted figure representing St. Faith, and surrounded with a geometric pattern, the whole being the work of Messrs. Cox & Sons.

Baddesley Clinton Church.—The chancel window of this church has recently been restored by Messrs. Camm, Bros., of Smethwick, near Birmingham. It possessed, scattered about, parts of figures, arms, and subjects, which have been re-arranged and completed as follows:—In the centre is the Crucifixion, and on either side, in the uppermost tiers, a St. George and Catherine; underneath three members of the Brome and Ferrers family. The two outer lights contain Sir Edward and Lady Constance Ferrers and sons and daughters, and the various arms of the families intermarried.

Roman Catholic Church, Kidderminster.—The congregation of this church have just filled the east window with stained glass. It is a large five-light window and tracery, containing figures of St. Patrick, Helena, Ambrose, Martha, Thomas of Canterbury in the lights, with the emblems of the Passion, supported by angels, in the tracery. It is executed on grisaille glass in monochrome with gold, no other colour being used, to preserve as much light as possible. The artists were Messrs. Camm, Bros., of Smethwick, near Birmingham.

Books Received.

Economics of Construction in Relation to Framed Structures. By ROBERT H. BOW, C.E., F.R.S.E. London: Spon. 1874.

THE two parts of this work now published,—first, classification of structures; second, diagrams of forces,—are intended to form a useful manual in themselves. In Part I., the illustrations are, in the meantime, confined to roof and bridge trusses, a considerable number of the designs to illustrate the classification being original. Part II. gives the application of the recently expanded method of arriving at the stresses in structures, by drawing diagrams of the forces. As Mr. Bow himself remarks, the importance to which this method has attained is almost altogether due to Professor J. Clerk Maxwell. It is to the neglect of this branch of engineering science that much of the clumsy and uncalled-for massiveness of certain ugly structures, and the lavish expenditure of material, labour, and money on them have been due, and the general admiration for such structures is a perversion of the public taste.

The Practical Assayer. By OLIVER NORTH. London: Chatto & Windus. 1874.

THIS work contains easy methods for the assay of the principal metals and alloys, and it is principally designed for explorers and those interested in mines. It provides for a want that has long been felt,—a knowledge of practical modes of assaying, without any general or extensive knowledge of analytical chemistry. Assaying is a mere mechanical art, and some of the best and quickest assayers have been mining youths who could hardly write their own names, and were not analytic chemists at all. All hard words and formulas have been left out, and only easy and useful methods, which do not need expensive apparatus, have been given, so as to be useful chiefly to the mining explorer.

VARIORUM.

"A Little Lower than the Angels." By Fanny Aikin-Kortright (Sampson Low & Co.), is prompted by the author's desire to see woman raised to a superior position morally and mentally than she has yet reached, and the title is chosen, says Miss Kortright, not to state what women are, but what they might be. Miss Kortright first gained a reputation by "The Dean," and from that time to this every line she has written has had a good purpose and been calculated to advance that purpose. It is not the question of woman's rights that is discussed in the little book before us; it is no endeavour to persuade the fairer half of creation to try and take the place of men; but a series of suggestive and eloquent chapters pointing out those paths in which woman can be useful, suggesting courses which lead to happiness, and indicating such a life as would leave those who lead it "Little Lower than the Angels" at the close of it. It is a good and charming little volume, and we heartily wish it (not chiefly for the author's sake), a large and long continuing circulation. —— The *Contemporary Review* (A. Strahan) is again enriched by the pen of Mr. Gladstone, in the shape this time of a minutely critical paper on Homer's Place in History. We take a paragraph from a paper in the same serial by Mr. W. R. Greg, titled "Rocks Ahead." After urging that the basis of our industrial supremacy is cheap coal, and that coal is ceasing to be cheap, the writer continues:—"The second great advantage which has hitherto made us the workshop of the world—the efficiency and conscientiousness of our artisans,—is becoming distinctly impaired by operations the influence of which is notorious, and the cure or counteraction of which is not yet visible. The power and the organisation of our working classes are growing year by year; and that power and organisation are being persistently applied to obtain higher rates of wages, and to enforce shorter hours of labour, while that labour is from the same causes becoming less conscientious and less disciplined. The inevitable result of these combined agencies is, that the cost of production of the commodities for which Great Britain has always been most famous is greatly enhanced both positively and relatively; while the boundless concentration and command of capital, which hitherto have so enormously reduced that relative cost, are no longer exclusively her own." His inference naturally is, the decadence of England.——A new story in *Cassell's Magazine*, "In Honour Bound," by Charles Gibbon, promises well. The author's power of description is of no common order.—— Some hints on varnishing are given in the new number of "Cassell's Household Guide":—"Before beginning to varnish it is necessary that the surface to which it is to be applied should be perfectly free from all grease and smoke-stains, for it will be found that if this is not attended to, the varnish will not dry hard. If the varnish is to be applied to old articles, it is necessary to wash them very carefully with soap and water before applying it. When it is wished that the varnish should dry quickly and hard, it is necessary to be careful that the varnish should always be kept as long a time as possible before being used; and also that too high a temperature has

not been used in manufacturing the varnish employed. It is likewise customary, when it can be done, to expose the article to the atmosphere of a heated room. This is called stoving it, and is found to greatly improve the appearance of the work, as well as to cause the varnish to dry quickly. After the surface is varnished, to remove all the marks left by the brush, it is usually carefully polished with finely-powdered pumice-stone and water. Afterwards, to give the surface the greatest polish it is capable of receiving, it is rubbed over with a clean soft rag, on the surface of which a mixture of very finely powdered tripoli and oil has been applied. The surface is afterwards cleaned with a soft rag and powdered starch, and the last polish is given with the palm of the hand. This method is, however, only employed when those varnishes are used which, when dry, become sufficiently hard to admit of it. When it is wished to varnish drawings, engravings, or other paper articles, it is usual to previously paint them over with a clear solution of gelatine. This is usually prepared from parchment cuttings."——The "Popular Educator" affords some instruction as to flat tinting in water-colour painting:—"The first exercise will be to make an even tint; this may be either uniform or graduated. Pin down or strain a piece of paper about the size of a quarter of a sheet of imperial; rub it all over gently with a piece of india-rubber, and place it on a table, having the upper edge raised so as to form an angle of about 25° or 30°. Mix in a saucer a middle tint of sepia, indigo, lake, or any other transparent colour; about a table-spoonful will be sufficient to cover a piece of paper of the above size; the pupil must bear in mind that in all cases of flat tinting, a sufficient quantity of colour must be prepared to last through the process, for if he has to replenish the saucer before the paper is covered, he will find it difficult to match the exact tint again, and unless he does so the surface will be irregular. For a uniform tint, he must commence at the top of the paper, avoiding the pasted edges, and with a full brush pass from left to right in a horizontal direction, fill the brush again, and pass from right to left, taking up the edge of the first layer; repeat this successively, backward and forward, *constantly replenishing the brush*, and taking especial care that *every part is covered as he proceeds*, so that there may be no necessity to retouch it, as this would produce cut shapes (stains and patches), which spoil the tint. When the whole is covered to the bottom of the paper, if there is a quantity of colour remaining at the edge, exhaust the brush on the blotting-paper, and pass it very carefully, without rubbing, along the overcharged parts; it will take up all that is not wanted, and then the paper may be left (still inclined) to dry. After a trial or two, a tint may be carried from the top to the bottom of a sheet of paper of any size without leaving the least mark or stain; and the more transparent the colour, the more even will be the tint. The great secret in making an even tint lies in using *plenty of colour*, so that it may flow down after the brush as it descends; great care must be taken that the brush passes horizontally across the paper, and in no other direction. A paper tinted with a light tone of sepia is very useful for effective sepia drawings upon which the high lights may be picked out."——Herbert's "Guide to London" (2, Charterhouse-buildings, Aldersgate), is certainly the gayest of gay directories addressed to visitors to the metropolis. It includes a number of views of the principal buildings.

The Sub-Wealden Exploration.—Mr. H. Willett, F.G.S., secretary to the Sub-Wealden Exploration Fund, reports that a depth of 900 out of the 1,000 ft. contracted for had been reached, and that the existing contract was nearly completed. A meeting of the Central Committee has been held in London to consider "Whether it be desirable to proceed with the work;" and, "If so, how the necessary funds are to be obtained?" It was unanimously resolved that, as such important economic and scientific questions were awaiting the completion of the undertaking, it was most desirable that the work should be continued. It was stated that 500*l.* were at once needed for lining tubes, and at least 250*l.* additional for every 100 ft. below 1,000 ft.

Gift to Cambridge University Museum. Lady Burdett Coutts has given a series of Devonian fossils, of great beauty, to the Cambridge University Museum.

Miscellanea.

Sanitary Condition of East Kent.—A summary of an exhaustive report by Dr. Robinson, the medical officer of health for the districts, relative to the general sanitary arrangements of the various districts in the combination of East Kent Sanitary Authorities appears in the *Kentish Express and Ashford News*. In his prefatory remarks, Dr. Robinson speaks of the shameful abuse of the naturally bright and sparkling streams of the district by the pollutions thrown into them, although they are more or less resorted to throughout their progress by many people who possess only these natural aqueducts as an available water supply. He states that the rural portions of his district are sadly behind the towns in good house accommodation, water supply, and the provision made for sewage disposal, and especially condemning the irregular and improper modes in which sewage and excremental matters from dwellings are disposed of; the soil and the atmosphere being both of them polluted by the off-scouring of the occupants, to say nothing of the penetration of those matters into the sources of drinking water also. It has been very generally the practice for drains from closets to discharge into open ditches, and in one village not far from Ashford a ditch of this kind ran along the village street and emptied itself into a large pond at the end, the water of which was of the colour of strong coffee. An immense number of complaints have been reported by the inspector, but the large majority have been abated. Dr. Robinson suggests the provision of water-tight receptacles, and the use of the ever-present deodoriser earth. To carrry out a scheme of this nature satisfactorily, two conditions for its fulfilment, he remarked, would require adoption, viz., the general application of a uniform principle in a locality, and the effective scavenging of the place. At a meeting of the East Kent Sanitary Combination resolutions in favour of carrying out these suggestions were adopted.

New Courts for Surrey.—Part of the newly-erected Court has been opened for use. The main entrance, as before, is from Newington-causeway, through a vestibule, above which are two towers, surmounted with mansard roofs. In the right of the vestibule is the treasurer's office and housekeeper's room. After passing through the vestibule there is a central hall, 50 ft. by 40 ft., on each side of which there are waiting-rooms. At the south-east corner the new Court is approached. It is 45 ft. by 40 ft. The Bench extends the whole of the east side of the Court; underneath there are seats for the clerk of the peace and assistants, and below them a table and ample accommodation for attorneys. On the east side there is a gallery, and underneath a space for the public. The dock is opposite to the Bench, and below that are seats to accommodate a large number of barristers. The jury-box is on the left of the chairman, and adjacent there is accommodation for the jury, and waiting and, at the rear, a retiring room. On the right of the chairman are the reporters' seats, and accommodation for witnesses in attendance. Above the vestibule is the grand jury room. There are several waiting-rooms, and two rooms for barristers adjoining the magistrates' room, giving access to both Courts, when finished. The basement of the new Court contains thirty cells for the prisoners, and adjoining are excellent machinery for ventilating and warming, by Messrs. Haden, of Trowbridge. The exterior of the new building is of white Suffolk brick, with brick mouldings and stone dressing. The builders' contract was 17,340*l.*, and an additional 3,000*l.* have been expended on warming, lighting, and ventilating. The architect is Mr. Howell, of Lancaster-place; and the builders are Messrs. Perry, Tredegar Works, Bow.

Re-opening of the Nottingham Fine Arts Museum.—This museum has been re-opened to the public, after receiving a new collection of art treasures from South Kensington in exchange for those that have been on view during the past year. The arrangement was made by Mr. George Harry Wallis. In addition to the collection from London there have been several local contributions and donations, including a case containing a collection of Nottingham pottery of all kinds,—kitchen utensils, drinking vessels, ornamental vases and tiles, lamps, and a number of objects the uses of which are not understood, some of them, from their shape and size, similar to Roman funeral urns.

Dean Stanley on the Catacombs of Rome.—An interesting lecture has been delivered by Dean Stanley on "The Roman Catacombs as illustrating the Belief of the Early Christians." The theatre of the Royal Institution, in which the lecture was delivered, was quite filled on the occasion. The dean pointed out that something might be gathered of the belief of the early Christians through the Catacombs, which might be called the Pompeii of early Christianity. They were rather a proof of the toleration which Christians received at the hands of the Roman Empire than of its persecution. The result of a candid investigation of the records was, that the idea of the Good Shepherd was the primitive idea of the early Christians. Without this idea they would hardly know that the Catacombs were a place of Christian burial at all. "I am the good shepherd"—or, as it should probably be translated, "I am the beautiful shepherd"—was the sign of the early Christian belief; but as this idea wore out, it was replaced by creeds and formulas. The belief impressed by the records of the Catacombs was that of a joyous creed, not that of a desponding melancholy one. It was represented by the spreading vine and the gathering of the grapes, by birds with bright plumage, representing the translation of the human soul, and by such inscriptions as "*Vive in Deo, vivas in Deo, vivis in Deo*," which would now probably be regarded as maxims of deists, pantheists, or even atheists. In the early Christian times the popular conception was that of a strong, joyous youth, of eternal growth and immortal grace, which was not to repel but to attract, not to destroy but to save.

Why Trees will not Grow in our Squares.—At a recent meeting of the Scientific Committee of the Royal Horticultural Society, Dr. Voelcker stated the results of his investigation of the soil of a London square in which Messrs. Veitch had twice planted planes, which in each case had died. According to the *Gardeners' Chronicle*, he found, on examining the clear watery solution from treating the soil with distilled water, that the soil contained one-tenth per cent. of common salt, and two-tenths per cent. of nitrates. Whenever the amount of chlorine in soil reached anything like an appreciable quantity, it exercised an injurious influence. Land, for example, which has been inundated by the sea, will not grow wheat for the next two years, though in the first year cabbages may be grown, and they will withdraw a good deal of the salt from the soil. The quantity of nitrates in the soil sent to him was remarkable. Usually in a soil it did not reach a proportion which could be expressed otherwise than by a third place of decimals. He could have no doubt that the two saline ingredients he had mentioned did the mischief. He did not doubt that it was owing to the place having been constantly used for committing nuisances that the presence of the salt and nitrates was due. In the same way rabbits kill hedges, and it is well known that it is years before grass will grow in their runs.

Brickmaking by Machinery.—Mr. William Stubbs, of Rickerscote, near Wolverhampton, has now in operation a machine of his own invention, which he has recently patented, for the manufacture of bricks. This machine is worked by steam-power. A brief description of the machine may interest many of our readers. To an onlooker is presented a revolving horizontal table, on which are fixed six dies for compressing the clay. On one side of the table stands a man who fills each die with clay, and on the other side of the table is another man who removes the clay after it has been compressed. Each die is fitted with a hinged lid or cover, and a sliding bottom, and as the table revolves the die passes under a fixed plate which compresses the clay. The clay is delivered in a column down an incline from the pug-mill, and is cut into blocks of the required size by means of wires by the man who fills the dies. The machine is capable of compressing 1,500 bricks an hour, or 12,000 in a day of eight working hours. By a multiplication of dies, the production would be considerably increased.

Neston and Parkgate Sewerage.—At a special meeting of the Neston and Parkgate local board, it was unanimously decided to adopt the plans for the sewarage of the district prepared by Mr. G. W. Goodison, C.E., of Liverpool, to make the necessary application to the Local Government Board for permission to borrow the money to carry out the works.

New Swimming-baths, Kennington Oval. The Crown Swimming-baths, which are situate in the rear of a number of villas, facing the South London cricket-ground, have been opened. It appears, from the *South London Chronicle*, that during some excavations by Mr. Higgs, the builder, of South Lambeth, the presence of a large quantity of water suggested to that gentleman that there might be found a sufficient supply for the purposes of public baths. An artesian well was successfully sunk, and the work of construction was at once determined upon. The entrance is by an archway into a corridor of about 120 ft. in length, by which the swimming-bath is reached. The bath, including the margin, is 160 ft. long by 60 ft. wide, the water surface being 127 ft. by 37 ft. The roof, open timbered, is ridged, as it were, by a lofty skylight extending the whole length, and, by a sort of clearstory arrangement, ventilation is secured. On either side are forty-six dressing-boxes, 92 in all. The depth of the water graduates regularly from 7 ft. to 3 ft. 3 in., and the gross measurement of the water in the bath is 130,000 gallons. Over the dressing-boxes, supported by iron pillars, is a gallery which runs round the whole of the interior. Three-fourths of its width are occupied by warm baths, the doors to which are reached by means of a stone staircase ascending from the entrance-corridor.

Alexandra Palace Art Union. — At Hanover-square Rooms we saw a collection of works of art about to be distributed by the directors of the Alexandra Palace Company to the present season-ticket holders, under the conditions of a circular recently issued. According to those conditions, the guinea season-ticket entitles the holder to participate in the annual distribution of works of art, consisting of original pictures in oil and water colours, statuary, porcelain, and pottery, bronzes, statuettes, engravings, photographs, and other choice examples of art. He will also be admitted to the park and grounds of the Palace on Sundays. The directors pledge themselves to set aside annually 20 per cent. of the gross amount realised by the sale of season tickets, to be devoted to the purchase of pictures and other high-class works of art exhibited in the Palace, so that for every thousand ticket-holders there will be an annual distribution of the value of 200*l*. We must confess that we view this part of the directors' programme with little favour. If the Alexandra Palace supply a public want it will not need any such scheme to start it. If it does not supply such a want, or is not well managed, no such scheme will make it a success. It is a mistake altogether.

Bonded Cellars under Lower Market, Exeter.—The corporate property has recently been extended by the enlargement of the cellars under the Lower Market. The town-council leased these cellars to Messrs. Harding & Richards, stipulating for a certain area; but on examination it was found that under the old corporation a job had been perpetrated, and that the cellars were then not nearly so capacious as was represented on the plans. The council ordered the work to be completed; and Messrs. Harding & Richards have inaugurated their opening of the cellars, recently converted into bonded stores, by inviting the mayor, the members of the town-council, and some other friends, to inspect them. The area covered may be roughly estimated at about 150 ft. by 100 ft. These extensive cellars are well ventilated, and lighted throughout with gas. After inspecting the ramifications of the cellar, the company were invited to partake of a champagne luncheon, which was served on an improvised dining-table, which extended more than half the length of the cellars.

A New Needle.—A lady in San Francisco, the *Chronicle* of that city says, has invented a new needle, the improvement consisting in making a needle of any size without an eye for the thread, but with, instead, a hole bored longitudinally into the head, or larger end thereof, to the depth of a quarter of an inch or thereabouts, which hole is arranged with a screw thread. The needle, it is claimed, will carry any kind of thread, and can be used for every purpose. It is thought that it will be valuable also, as a surgical needle, as it will require but one thread, the advantage of which will be that a smaller hole will be made in passing the needle through any substance than would have to be made by the partially doubled thread of the ordinary eyed needle.

Wells Cathedral Restoration. — The exterior restoration of this cathedral is now almost completed. The columns and abaci in the west front, of blue lias, which in the course of centuries had almost crumbled away, are now replaced by columns and abaci of Kilkenny marble. The length of the columns referred to cannot be less than 5,000 ft. The canopies above the heads of kings and bishops, and the arcades, had also in many cases crumbled away through exposure, and in one or two instances, having lost the support of the columns, had fallen down bodily. All those which had fallen, wholly or in part, have been replaced by canopies or arcades exactly corresponding in shape, size, and materials to the originals. No attempt in the late restoration has been made to replace any statue. A very few indispensable reparations, with the single view of preservation have been attempted. The number of principal statues exceeds 100; the number of figures of smaller dimensions in the quatrefoils, &c., must exceed 1,000.

Value of Land in Middlesbrough.—Land near this thriving town, like that in most of our northern cities, has wonderfully increased in value, as was instanced at a recent sale by auction. About 160 acres were put up by Messrs. Driver, the auctioneers, of London. One portion, called Ulla Farm, about 90 acres, situate midway between Stockton and Middlesbrough, realised upwards of 6,000*l*., or over eighty years' purchase upon its present rental. The other portion, Swatter's Carr, containing about 70 acres, within the borough, and thus possessing building value, was bought by Mr. Joseph Dodds, M.P. for Stockton, for the sum of 56,000*l*., or more than 800*l*. an acre. Neither estate is believed to possess any mineral value.

The Sewage Question.—Mr. J. C. Melliss, C.E., referring to a statement that "The chemical processes, some of which are well calculated to be useful, if not profitable, are not making much headway just now," writes to the effect that the Anderson precipitation process is in operation by the General Sewage and Manure Company at Coventry, and that the whole of the sewage of that city, amounting to 2,000,000 gallons a day, is purified, the effluent water passing into the river, and the dried precipitate sold as an agricultural manure at a remunerative price. He merely wishes to make known that a chemical process has, as a fact, in this instance at any rate, solved the sewage difficulty.

Subsidence of a Railway Bridge at Woodley.—A large bridge over the Peak Forest Canal, near Woodley, about 50 yards long, on the new line of railway, has subsided so much that it has been found necessary to draw the water off in the canal for some days, in order to repair it. In the centre of the abutment has been a quicksand, which has caused the subsidence, and hence endangered the safety of the brick and stone work, which has given way in various places. About 200 workmen are engaged by the contractors, Messrs. Benton & Woodiwisse, in taking out the clay from the canal bottom, and laying an archway of brickwork to strengthen the foundations. The cost is estimated at several hundred pounds.

Huddersfield Infirmary.—The new wing which has recently been added to the north side of this institution has been formally opened. The wing consists of an upper and lower ward—the former for women and children, and the latter for males; and it is built upon the pavilion principle. Each ward is estimated to accommodate twenty-eight beds. The wing has been constructed from designs supplied by Messrs. J. Kirk & Sons, architects, Huddersfield and Dewsbury. The cost will be about 4,000*l*. or 5,000*l*., but the whole of the improvements which it is proposed to carry out will require a sum of 7,000*l*.

Epping Drainage.—Mr. Sclater-Booth, replying to Dr. Lush, in the House of Commons, said that the amount expended on the works of the Epping Special Drainage districts was 11,500*l*.; that the drainage and water supply were very imperfect, and that the rate of mortality in the district was very high. He received a deputation only the day before on the completion of the works, and would defer his answer until after the Whitsuntide holidays.

Coventry Sewage Works.—We are asked to state that Latham's patent solid sewage extractors used in these works were erected by Messrs. G. Waller & Co., of Southwark, who are the sole manufacturers of these machines.

New Masonic Hall for Surrey. — The memorial stone of a new masonic hall has been laid close to the Camberwell-road Railway Station, for the use of the members of the ancient craft resident on the south side of the Thames. The hall will belong to the "Surrey Masonic Hall Company." There is to be a large hall capable of accommodating 700 persons, and available to the general public for balls, concerts, entertainments, and other meetings. The design, which will present an elevation to the Camberwell New-road, is the work of Mr. Edward Clark, architect to the company.

The Bursting of Reservoirs in America. New York journals of the 18th of May bring details of the catastrophe at New Hampshire. Two villages were devastated by the bursting of the Williamsburg reservoir. The *New York World* says:—"One hundred and twenty buildings are destroyed, hundreds of acres covered with stone and mud. No one has attempted to estimate the loss in money. As for human life, to-night ninety bodies in all have been found, and squads of men, here and there through the valley, are looking for some thirty more missing men. Even now that the waters are down, the danger is not reckoned entirely over."

A Temperance-hall for Middlesbrough. The foundation-stone of a temperance-hall has been laid at Middlesbrough. The hall, when completed, will accommodate 1,500 persons, and there will be rooms suitable for lodge, club, and other meetings. Mr. John Dunning laid the stone, and in the course of his address said, that his subscription (250*l*.) towards building the hall was part of his debt to the temperance cause, for had he not become a teetotaller, most probably that and other money would have been wasted in dissipation.

Chester Archæological and Architectural Society.—A meeting of this Society was held last week, in the King's School, by permission of the Very Rev. the Dean, who was voted to the chair. There was a good attendance, and two hours were profitably spent in listening to an ably-written paper by the Precentor, on "Ranulph Higden, the author of the *Polychronicon*, and the recent discovery of his grave in Chester Cathedral," and an interesting description, by the Dean, of the *Misereres*, or stall-seats, of the Cathedral, which are now undergoing repair.

The Restoration of Gloucester Cathedral. The sum total expended on the restoration of the choir, transepts, aisles, and south porch of Gloucester Cathedral amounts to 16,519*l*. 3*s*. 7*d*. This sum is exclusive of the outlay by the Freemasons, on the reredos; by Mr. Marling, on St. Andrew's Chapel and the great south window; by the late Earl of Ellenborough, on St. Paul's Chapel; by the Codrington Memorial Committee, on St. Philip's Chapel; by Mr. Dent, for the lectern; and by Mr. Nicks, for the window in the south porch.

Museum for Ripon.—A public meeting has been held at the town-hall, Ripon, to take into consideration the advisability of establishing a public museum for the city. The Marquis of Ripon, K.G., presided, and it was resolved,—"That a public museum for the city of Ripon is very desirable, as an important and useful educational institution." Further,—"That a subscription be opened, and the most advantageous and convenient measures be adopted for the purpose of establishing a public museum in the city."

New Vestry Hall for Rushden.—For years past the want of a suitable room in this village for vestry meetings has been much felt. Power being given to the vestry to borrow 300*l*., repayable within ten years, on the security of the rates, for the purposes of the building, the old room is now in course of demolition, and, as soon as the plans are ready, the new Vestry Hall, on the same site, will be proceeded with.

Birmingham and District Architectural Association.—On Saturday last the members of the Association visited the church now being erected at Park Hill, Moseley, from the plans of Mr. W. Preedy, of London, architect. The members were conducted over the building by Mr. C. Noble, the clerk of the works.

Association of Municipal and Sanitary Engineers and Surveyors. — A successful meeting has been held in Birmingham, running over three days. Various papers were read and discussed. We will give more detailed particulars and some comments in our next.

New Post-Office for Warrington.—The Post-office authorities are negotiating with the solicitors of Lord Winmarleigh as to the conveyance of a site for a new Post-office, opposite the Town-hall, and arrangements are in progress for the commencement of building operations forthwith. In the present building a staff of forty persons is at work in two rooms, the larger one 48 ft. by 15 ft. and 9½ ft. high; the smaller, 15 ft. by 9 ft. and 7½ ft. high.

Price of Land in London.—The freehold site formerly occupied by the Church of St. Martin Outwich, at the corner of Threadneedle-street, was on Monday purchased by tender from the Ecclesiastical Commissioners by Messrs. Hardwick & Holmes, solicitors, for a client, at the price of 32,050*l*. It contains upwards of 2,200 square feet. The price is equal to about 640,000*l*. an acre.

Another Museum for Birmingham.—In the local *Daily Mail*, of 18th ult., is an article ably advocating the establishment of a Gun-makers' Museum to illustrate the materials, processes, and appliances used in the special trade and manufacture of fire-arms, and their history, with a library of appropriate books and patents, &c.

TENDERS

For the new Church of St. Mary, Newington, Surrey. Mr. James Fowler, architect:—

Pattinson	£21,502	0	0
Gammon & Sons	18,316	0	0
Manley & Rogers	18,250	0	0
Rider & Son	18,070	0	0
Tarrant	18,000	0	0
Lathey, Brothers	17,970	0	0
Downs & Co. (accepted)	17,660	0	0

For alterations and additions to 8A, Red Lion-square, Holborn, for the Midnight Meeting Movement. Mr. W. P. Griffith architect:—

Devereux & Son	£396	0	0
W. & J. Lister	372	17	0
Flaxman	368	10	0
Moreland & Nixon	355	0	0

For new Primitive Methodist chapel, White Hart-street, High Wycombe. Mr. Arthur Vernon, architect. Quantities supplied:—

Woodbridge	£3,195	0	0
Banghurst	3,030	0	0
Snell	3,004	19	0
Cooper	3,003	0	0
Waud	2,902	0	0
Reavell	2,900	0	0
Hunt	2,830	0	0
Sexton	2,805	0	0
Spicer (accepted)	2,661	0	0

For a sewer in Limerston-street, for the Vestry of the parish of St. Luke, Chelsea. Mr. Josh. Pattisson, surveyor:—

Pearson	£890	0	0
Neave & Son	872	0	0
Keeble	759	0	0
Feltham, Bros. (accepted)	648	0	0

For repairing and decorating Arundel-square Chapel. Mr. W. Bridgart, architect:—

Woods	£500	0	0
Steed, Bros.	489	0	0
Porter	445	0	0
Cooke	435	0	0
Richards	430	14	0
Coleman	373	0	0
Howard	346	0	0

For alterations to the Brondesbury Arms, Canterbury-road, Kilburn, for Mr. W. Clark. Quantities by Mr. Septimus Hoskins:—

Coney	£645	0	0
Toms	533	0	0
Hyde	530	0	0
Lamble (accepted)	469	0	0

For erecting warehouse, Fresh Wharf, London Bridge, for Messrs. J. Knill & Co. Messrs. Snooke & Stock, architects. Quantities supplied:—

Brown	£8,975	0	0
Conder	8,892	0	0
Mundy	8,779	0	0
Jackson & Shaw	8,672	0	0
Wood	8,523	0	0
Browne & Robinson	8,465	0	0
Adamson & Sons	8,460	0	0
Coleman	8,354	0	0
Rider	8,280	0	0
Brass	8,193	0	0
Bland (accepted)	7,994	0	0
Newman & Mann	7,726	0	0

For wall and railing, Tooting Cemetery:—

Pearson	£4,050	0	0!
Dickenson	2,280	0	0
Main & Co.	2,100	0	0
Tyerman	1,994	0	0
Cottam & Co.	1,986	0	0
Stone	1,985	0	0
Riches (accepted)	1,794	0	0!

For the restoration of Benniworth Church, Lincolnshire. Mr. James Fowler, architect:—

Barker	£1,372	0	0
Clark & Son	1,200	0	0
Thompson	1,188	0	0
Walter & Hensman (accepted)	1,185	0	0

For building public hall at Carshalton, Surrey, for the Carshalton Public Hall Company (Limited). Mr. J. D. Hayton, architect:—

Keel	£1,725	0	0
Clark	1,650	0	0
Sneezham	1,600	0	0
Coles (accepted)	1,548	0	0

For alterations to premises, Berry-street, Bootle, for Mr. Wilson. Messrs. Murray & Thomas, architects:—

Blundell (accepted)	£520	0	0

For the Wilberforce Memorial, consisting of new chapel, dining-hall, offices, &c., at Cuddesdon College, Wheatley, Oxon. Mr. G. E. Street, architect:—

Lovatt	£6,635	0	0
G. & F. Higham	6,394	0	0
Adamson & Sons	5,989	0	0
Castle & Sons	5,715	0	0
Symm & Co.	5,337	0	0
J. & T. Davis	5,300	0	0
Silver & Co.	5,164	0	0
Franklin & Son	5,019	0	0

For the erection of a detached house and stable buildings at Brackley, near Banbury, Oxon, for Major Fairfax Cartwright, M.P. Messrs. Franklin & Andrews, architects:—

Downs	£10,956	0	0
Macey	10,880	0	0
Trollope	10,740	0	0
T. & S. Orchard	10,211	0	0
Brass	10,176	0	0
Munday	9,530	0	0
J. & T. Davis	9,332	0	0

For alterations and additions to a house at Brackley, near Banbury, Oxon, for the Hon. R. W. Grosvenor. Messrs. Franklin & Andrews, architects:—

Downs	£1,610	0	0
Trollope	1,560	0	0
Macey	1,559	0	0
Orchard	1,399	0	0
Brass	1,397	0	0
Munday	1,375	0	0
J. & T. Davis	1,297	0	0

For additions and alterations to the St. Pancras Vestry-hall. Mr. H. H. Bridgman, architect. Quantities by Mr. W. Barnett and Mr. F. Thomson:—

	If Plate Glass and Wainscot Fittings.					
Kelly, Bros.	£4,887	0	0	£5,090	0	0
Manley & Rogers	4,647	0	0	4,845	0	0
Crockett	4,411	0	0	4,606	0	0
Aitcheson & Walker	3,883	0	0	4,153	0	0
Moreland & Nixon	4,194	0	0	4,439	0	0
Wall, Bros.	3,998	0	0	4,216	0	0
High	3,870	0	0	4,075	0	0
Elkington	3,730	0	0	3,929	0	0
Grimwood & Sons	3,619	0	0	3,935	0	0
Niblett & Son	3,530	0	0	3,710	0	0
Willson, Bros.*	3,465	0	0	3,722	0	0

* Accepted.

For alterations to and extension of premises situated Nos. 1, 2, & 3, Little Britain, City, for Mr. George Kenning. Mr. E. I'Anson, architect. Quantities by Messrs. Pain & Clark:—

Yardley	£2,999	10	0
Oliver	2,995	0	0
Kilby	2,973	0	0
Adams	2,790	0	0
Pritchard	2,744	0	0
McLachlan	2,597	0	0
Rider	2,580	0	0

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